THE IMPACT OF RAPID TRANSIT STATIONS ON INNER CITY RESIDENTIAL AREAS: A CASE STUDY OF CANDLER PARK (ATLANTA, GEORGIA)

A THESIS OPTION PAPER

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INTRODUCTION

Modern rail rapid transit systems are becoming an increasingly familiar component of the large North American city. The spectacular success of the Toronto and San Francisco systems in stimulating urban development has been widely documented, and considerable interest has been generated in the Metropolitan Atlanta Rapid Transit Authority project. Nine North American cities have operating rapid transit systems, five of which were built since 1950. In addition, there are 27 cities where rapid transit systems are either under construction, in preliminary planning, or under serious legal consideration. [1] This mode of transportation for urban areas appears to be the predominant mode for future inner city movement. It has been estimated that these new systems would entail construction of approximately 600 to 700 new transit stations, each with an immediate impact upon the surrounding area. [2] The economic impact is highly beneficial and includes the potential development of housing, office and commercial uses, and appreciation of property values.

The purpose of this study is to determine the relative impact of rapid transit stations on neighborhood development

and residential property values. The study will examine the factors influencing property values in the vicinity of rapid transit stations. An understanding of these factors is important in identifying the factors leading to the conversion of single-family residential development to alternative types of development.

An analysis of the impact of a rapid transit station on residential property values will also be addressed. The analysis will determine the maximum area of impact of a transit station on residential property values. In addition, the analysis will determine if the impact decreases in magnitude as the distance from the transit station increases.

Finally, the study will discuss the characteristics of development near neighborhood transit stations. Suggestions will be made for achieving a more compatible relationship between rapid transit stations and surrounding development.

There are a series of assumptions that have been formulated in the development of this paper. These assumptions are briefly summarized here. First, the study is only concerned with the impacts of fixed rail rapid transit systems. The impacts of other types of mass transit systems, such as streetcar and light rail, are not examined. Second, the study encompasses only the rapid transit systems within North America, and not any European transit systems. Third, the rapid transit systems studied include only those in operation or under construction.

Finally, the scope of the study is limited to the impact of rapid transit stations located in low-density, inner city neighborhoods.

The conclusions of the study have general applicability to areas surrounding neighborhood transit stations. They may not be applicable to all transit station areas. The conclusions may be generally applied to the impacts of rapid transit systems in Toronto, San Francisco, and Atlanta.

The balance of the paper is divided into six chapters. Chapter II examines the relationship between rapid transit facilities, land use, and land value. In Chapter III, the various factors influencing land use and land value in the vicinity of rapid transit stations are identified. An analysis of the impact of a transit stations on residential property values is presented in Chapter IV. Chapter V discusses the characteristics of development near transit stations serving residential areas. In Chapter VI, methods for preserving existing residential development and controlling future development near rapid transit stations are discussed. The conclusions of the study are presented in Chapter VII.

Chapter II

THE RELATIONSHIP BETWEEN RAPID TRANSIT FACILITIES, LAND USE, AND LAND VALUE

Historically, all modes of transportation have had an effect upon real estate development. In almost every large North American city, the history of real estate development parallels the history of transportation.

Natural waterways for travel governed the selection of the original sites for commerce and industry with residences grouped immediately around these districts. In the early 1800's, the development patterns of the cities were heavily influenced by the construction of railroads. The railroad companies themselves frequently established industrial, hotel, and commercial development in order to stimulate freight and passenger traffic on their lines.

During the latter half of the 19th century and early part of the 20th century, both passenger and freight movements were heavily dependent upon fixed rail routes. Local transportation was confined principally to streetcar lines, suburban rail lines, and, in some cases, elevated and subway lines. This fixed rail transportation focused primarily on the downtown area.

For many years, residential and commercial development into

peripheral areas followed the tracks leading outward from the central core. Land values were sharply affected by their proximity to these tracks, and by the possibility of their further extension. Urban development was characterized by extension of the cities in linear corridors into the countryside near tracks leading into the downtown area. However, these early development patterns were later influenced by the automobile. The expansion of roadway systems sharply reduced the public's dependency on fixed rail systems. Consequently, the shape of the city and its growth patterns changed. This led to the creation of whole new areas with increased land values for residential, industrial, and commercial development. These areas of development were located further away from the original center. However, in nearly every instance, the large commercial center of the urban area has remained fixed.

Thus, the experience of the past century indicates that changes in the forms of transportation, such as the introduction of a rapid rail transit system into a region, can influence the size and form of urban development. Rapid transit provides a unique opportunity to observe the relationships between transportation and land development.

Two elements of land development must be examined: land use and land value. Land use planning theory reveals that changes in relative accessibilities of locations to the commercial center will shift demands and affect site values. [3] If the

land values are higher at more accessible locations, more intensive development of the land should be expected at these locations. This more intensive development of the land will result in higher densities of land use. Rapid transit thus influences land development in its function as a circulation system which maximizes the accessibilities of land uses. This increased accessibility shifts human activities to the most accessible locations, promoting more intensive land use. The more intensive the land use, the greater the demand for land use at a particular location; therefore, the greater land value of such location.

The more intensive land use and greater land value of more accessible land parcels reflect anticipated savings in travel time and costs between origins and destinations. [4] The potentially greater economic efficiency of the area may attract new development to the area and concentrate it near one or more rapid transit stations. This savings in traveller's cost will increase the value of certain real estate. The resulting higher land values provide an incentive to develop such real estate for maximum yield. [5]

Rapid transit has been the key factor in urban development. G. Warren Heenan, past president of the Toronto Real Estate Board, in an address entitled "The Influence of Rapid Transit on Real Estate Values in Toronto", stated that rapid transit was one of the most effective stimulants to the further development of Toronto. [6]

Evidence of the effect of rapid transit on real estate development and property values can be noted in the effect of the Toronto subway system. The original 4.5 mile Yonge Street Subway, which was completed in 1954, had an effect of promoting more intensive land use and greater land value. The total cost of the subway including right-of-way, rails, electrical distribution system, signal system, and rolling stock was $67 million. This $67 million investment in a subway system ignited a $10 billion development explosion along the route from Front to York Streets to the northern terminal, Eglinton Avenue. [7]

Between 1956 and 1966, the appraised value of all the land and facilities in Metropolitan Toronto increased by $15 billion, and two-thirds of this is attributable to the existence of the Yonge Street Subway. Properties along the subway route doubled and tripled, sometimes increasing as much as ten times their original value. During the ten-year period between 1952 and 1962, tax assessments in districts contiguous to the Yonge Street subway line increased 45 per cent in the downtown area and 107 per cent in the uptown area from College Street to Eglington Avenue. During the same period, assessment increases for the rest of the city averaged 25 per cent. This development did not happen by accident. There is no doubt that a rapid transit system has a tremendous impact on land use and consequently land values. [8]

In the five-year period between 1959 and 1963, 48.5 per cent of all high-rise apartment development in the city occured in four planning districts served by the Yonge Street Subway. Similarly, 90 per cent of all office construction in the same period occured in three planning districts. The subway passes through the center of these planning districts. In other words, two-thirds of all new development in the five-year period took place within a five minute walk from the Yonge Street Subway. [9]

The impact of the Bay Area Rapid Transit System in the San Francisco region confirms the Toronto experience. San Francisco is undergoing a sizeable boom in high-rise office construction. This boom in high-rise office space has exceeded the expectations of all the citizens who voted to finance the BART system. Since BART was approved by voters in 1962, more than 500 floors of new office space worth $1 billion have been added to the San Francisco skyline on Market Street. Further, between 1962 and 1969 office space available or under construction in San Francisco rose from 16,980,000 square feet to 30,345,000, an increase of 78 per cent. All of these new buildings are within a few pedestrian minutes of BART stations. [10]

An addition to this building boom is the lower Market Street $350 million Embarcadero Center. This complex is comprised of an office high-rise structure, a 16 store hotel, and three theaters. Due to the impact of the Embarcadero Center,

private investors have provided $500,000 in engineering design fees for a fourth BART station on Market Street. It is expected to become the most frequently patronized station in the entire BART network. These investors believe such a new BART regional station will increase land use and value in its vicinity. [11]

Along Market Street, BART subway stations are being extended into the skyscrapers by means of private access entrances 20 feet beneath the street. The new 43 story Wells Fargo Building will provide a pedestrian passageway for thousands of workers passing between transit stations and the Montgomery Street financial district. In San Francisco, rapid transit has thus had a great impact on land use in the vicinity of Market Street. This increase in the intensity of land use in the vicinity of Market Street has increased the value of land in this area. [12]

However, outside the financial and business center of the region, only minor and scattered transit related development has occured. This development has occured predominantly near stations, consisting of office buildings, shopping centers, and apartment buildings. This suburban land was in some cases zoned for agricultural or low-density development. For example, the Walnut Creek Station area has been rezoned for commercial and high-density use. To date, much of the development has been of limited quality, consisting in the majority of discount stores, supermarkets, and small service businesses. The

prospects of BART access raised expectations for higher density development and therefore increased the value of suburban land. In some cases, well located parcels, such as those near the BART station in Union City, have increased in value by 50 per cent or more over their previous value. [13]

Thus, as demonstrated in both Toronto and San Francisco, rapid transit has acted as a catalyst for urban development. It has increased the accessibility of certain locations. This increased accessibility has promoted more intensive land uses at the more accessible locations, such as within a five minute walk of the Yonge Street Station in Toronto and a five minute walk of the Market Street Station in San Francisco. Since there is a greater demand for land near these locations, the value of this land has greatly increased.

Chapter III

FACTORS INFLUENCING LAND USE AND LAND VALUE

Based on the experiences of Toronto and San Francisco, it seems logical to conclude that land development will significantly increase in the vicinity of rapid transit stations. One might also conclude that the location of a rapid transit station in a neighborhood will lead to the conversion of single-family residential property to some other type of development. In fact, it is commonly believed that the construction of a rapid transit system in an urban area will promote the development of high-density office and commercial complexes adjacent to rapid transit stations. However, many additional factors will influence this development as well. The construction of a rapid transit system is only one of the factors influencing the development of properties in the vicinity of transit stations.

Assuming favorable market demands, a project will generally rely on the cost of land as the primary determinant for subsequent development. This land value is a product of several factors. The purpose of this chapter is to identify the influencing factors and explain the general effects of these factors on land use.

Distance from the Central Business District

The first factor influencing land use and land value is the distance from the transit station site to the central business district (CBD). In recent years, several theories have hypothesized that land values decline with distance from the CBD. [14,15]

How the structure of land values varies spatially in the city in accordance with site development potential has been shown by Knos in a study of Topeka. [16] In a relatively simple representation of the structure of land values found in the city, the values in the CBD are significantly greater than in other sections of the city. Since it is the major center for employment, business transactions, and shopping, land values are high and there is more intensive land use. However, intensity of use rapidly declines as the less accessible outer sections of the city are reached.

In his study of Topeka, Knos tested the relationship between land values and land use. He found that land values vary inversely with the distance from the center of the city. [17]

As discussed in Chapter II, rapid transit changes the relative accessibilities of land locations to the CBD, promoting more intensive land use and greater land values. As the distance between the transit station and the CBD decreases, an additional increase in land values should result. Consequently, station locations near the CBD should experience more intensive

development than distant suburban locations if all factors affecting land value are equal.

Zoning

Land value appreciation can definitely occur near new rapid transit station sites. However, actual development, which spawns speculation and rapid increase in property values, requires the cooperation of government agencies.

The City of Toronto Planning Board recognized the impending impact on land use adjacent to the Yonge Street Subway. They adopted a comprehensive report recommending significant zoning changes. These recommended zoning changes doubled and tripled the market prices of properties. Hundreds of residential lots, 175 feet wide and 200 feet in depth, were rezoned to accommodate high-density apartment buildings. Many families who bought modest homes at $15,000 to $25,000 sold them to developers for $50,000 to $75,000. [18]

Zoning may also hinder development. In some cases, zoning is designed to prevent changes from occuring in desirable neighborhoods. In northern Berkeley, for example, the zoning ordinance became more restrictive to prevent land use changes in response to BART. [19] At another BART station location in Haywood, recent zoning enactments require new development to be compatible with station area land use around the aerial station. [20] Several years ago, the City of San Leandro

established special "T", or transit, zoning for similar purposes. [21] This type of zoning is discussed more fully in Chapter VI.

In order to carry out its plans for transit station area development, the City of Atlanta hopes to adopt a new zoning ordinance including transit station districts. The new ordinance uses the concept of intensity, rather than density, to control development in transit station areas. Intensity zoning relates building size to the land through floor-area-ratio (FAR) with the FAR assigned to a specific lot carrying with it requirements for open space. Proposed FAR's for residential development range from 0.1 to 3 and up to 20 for commercial projects, although a built-in bonus for the inclusion of open space or public amenities will boost the actual maximum commercial FAR. The ordinance will also seek to encourage various types of planned developments for the station sites. [22]

Surrounding Land Use

The type and character of the surrounding land use also influences the location of new development. Proximity to other favorable developments increases land value and thus influences development.

A large amount of vacant land in a station area is a positive aspect for encouraging future development. For example, in several of the closer in, older areas along the BART line in San Francisco, potential locational advantages of

property near stations have not attracted investment of any significant scale. The fact that the entire 75-mile system is being built at once undoubtedly has a significant influence on investment. Developers looking for residential, commercial, or other sites need not pay for developed land in an older district in order to be close to BART. They have the option of acquiring less expensive, vacant land in a more affluent suburban location a few minutes further away by rapid transit. [23]

In developed areas within the city, low-density residential land use will influence the location of new high-density development more than commercial use. Generally, the assembling of residential properties into suitable parcels for redevelopment is more difficult and less economical than the redevelopment of commercial properties. In addition, new development, such as commercial and office use, will be opposed by the neighborhood residents and will be out of character with the surrounding residential uses.

Development is even more influenced in areas containing deteriorated housing because such conditions inhibit private investment. Furthermore, the transit station should make the surrounding residential areas more attractive and encourage renovation of these neighborhoods. As the area upgrades, property values will increase, making clearance and redevelopment even more unlikely.

Site Elements

The various site elements characterizing the properties in the neighborhood affect land values and influence development. They include: topography, vegetation, hydrology, soils, size and shape of parcels of land, and land ownership patterns.

Topography is a factor which influences development in less densely developed areas. If the area contains slopes greater than five per cent, little large-scale, high-density development can take place because of the high cost of grading and the large amount of storm water runoff and erosion.

Vegetation as an indicator of development suitability has more importance than merely aesthetic values. Vegetation growth is ruled by natural succession, proceeding from grass through pine forests, and finally to its climax in hardwood forests. Hardwood forests, which take up to a century to rejuvenate, have a greater ability to retain soil and surface water runoff and can sustain a diversified wildlife community even in urbanized areas. Consequently, areas containing hardwood forests should be preserved as natural areas and protected from development.

Hydrology is another factor which influences the development suitability of a site. Development in transit station areas containing flood plain areas, major streams, and high water tables should be prohibited. These areas are important for drainage and controlling storm water runoff.

Soils also place restraints on development. They determine if buildings can be supported on land, depending on the depth to bedrock and the shrink-swell potential. General development suitability can also be determined from permeability and erodibility.

The size and shape of existing parcels of land in the vicinity of the transit station influences development. High-density residential, office, and commercial uses require large parcels of land. Where ownership of land is highly fragmented into small parcels, it is difficult for a developer to assemble enough property to be able to implement substantial land use changes.

Availability of Public Services

The availability of public services, such as utilities, fire, and police protection, can also increase the value of land and influence development. Intense development cannot take place without a great demand on utilities and other public services. When utilities are over burdened, or at their capacity, new development will be delayed.

Proximity to community facilities, such as health centers, schools, and parks, can influence the development potential of transit station areas. These facilities increase the desirability of an area for residential development.

Accessibility

The final factor which influences development in an area is accessibility by major thoroughfares. Although rapid transit increases the accessibility to an area, high-density development, such as commercial and office complexes, cannot occur unless adequate thoroughfares exist in the area. The location of commercial and office buildings must be convenient for customers and have easy access to major traffic routes as well as mass transportation. Inadequate transportation facilities and the resulting traffic congestion are detrimental factors in locating new developments. Adequate thoroughfares are required to insure convenient traffic circulation.

Therefore, several factors influence land use and land value in the vicinity of a rapid transit station. The transit station is only one of the factors influencing the development of properties in the vicinity. The location of a rapid transit station in a neighborhood does not automatically result in a conversion to high-intensity development. Although increased development is likely to occur, no general statement regarding the amount and type of development which can be attracted to a particular transit station location can be made without first examining all the influencing factors which exist in the neighborhood. If the neighborhood has a high potential for redevelopment based on land value, the location of the transit

station should result in a conversion of single-family residential property to some other type of land use.

Chapter IV

TRANSIT STATION IMPACT ANALYSIS

With the development of rapid transit systems, consideration must be given to their effect on property values. Since the transit stations are the only points of access to and egress from the system, the impact of a rapid transit system is related primarily to the locations of its stations.

The impact of a rapid transit station on residential property values in its "zone of influence" or impact area is examined in this chapter. A method of measuring the amount of impact is described. The analysis of the impact of a rapid transit station on residential property values will provide answers to the following questions:

(1) What is the radius of impact of a rapid transit station on residential property values?

(2) Does the impact on property values decrease in magnitude as distance from the transit station increases?

These impact questions are examined through a case study of the neighborhood surrounding Atlanta's Candler Park transit station. Answers to these questions will provide a better understanding of the impact of a rapid transit station on residential property values. For comparison purposes, case

studies of the impacts of rapid transit systems in other cities are also presented.

Research Strategy

Several methods can be utilized to evaluate the impact of a rapid transit station upon property values. Methods of evaluating the impact of rapid transit systems have been developed by Boyce and Allen [24], Lee [25], Davis [26], Skaburskis [27], Robinson (M.A.R.T.S.) [28], and others. All of these methods are based upon the idea that the construction of a rapid transit system will undoubtedly have an impact on the value of property lying in the vicinity of the transit station. This impact on property values will decrease in magnitude as distance from the transit station increases.

As a basis for the analysis of the impact of a rapid transit station on residential property values, sales prices of single-family houses were used. Sales price, or market price, is the amount of money actually paid for a house and parcel of land in a particular transaction.

The ideal analytical method of finding and measuring the impact would involve an experiment in which identical houses located in different areas of a neighborhood in which a transit station has been located are sold during one time period. An analysis of the changes in sales prices would tell us the amount of differences in values which can logically be attributed to

the existence of the facility. Obviously, such an experiment is not possible, and we must make use of data available from market transactions occuring at different points in time and involving different houses.

In order to determine the amount and area of impact of a rapid transit station on residential property values, two analytical methods were selected. First, a before and after method was employed to compare sales prices in the neighborhood before the acquisition of the station site by the transit authority with those after the site acquisition. A control area was also used by examining comparable transit and non-transit areas located equal distance from the central business district. The amount of changes in sales prices of single-family houses over time was measured in both the transit and control areas. The rationale underlying this method is that if the transit station has had any impact at all on sales prices of single-family houses, then the area immediately surrounding the station could be expected to experience a greater change than the control area.

The second method used to determine the impact of a rapid transit station on residential property values involved a comparison between the assessed values and sales prices of single-family houses. Assessment involves the valuation of property. Under this process, each parcel of property is evaluated annually to determine its market value. The market

value of property is the highest price in terms of money which a parcel of property will bring in a competitive and open market. The property is then assessed at some percentage of the market value. States generally require that this ratio be uniform. In Georgia, property is assessed uniformly at 40 per cent of the estimated market value.

The tax assessor's estimates of the market values of houses in the vicinity of transit stations have not been adjusted to account for the presence of the transit station and should not reflect any transit induced price changes. It is known that in many cases sales prices of houses are frequently higher or lower than the assessor's estimates of the market values. However, the discrepancies between the assessed values and the sales prices should remain relatively similar between two areas over a certain time period. The rationale underlying this method is that if the transit station has not had an impact then the discrepancies between the assessed values and sales prices of single-family houses in the transit and control areas should be fairly similar during the time period after the acquisition of the station site. If the location of the transit station has affected prices, then the discrepancies should be greater in the transit areas than in the non-transit or control area.

The primary source used to determine the impact of a transit station on sales prices of single-family houses was a series of real estate reports entitled "Residential Today".

Published by Land Data Corporation of Atlanta, Georgia, the market transactions in the reports are listed by Land Lot, street address, and date of sale. The reports are published monthly and represent the most complete and reliable tabulation of residential market transactions available.

The principle source used to obtain assessed values for properties was the assessor's and recorder's files in Fulton and DeKalb Counties. The most recent assessed values available were obtained.

The Atlanta System

The construction of the rapid rail transit system in Atlanta provides an opportunity to study the impact of a transit station on property values. This section presents a description of the Atlanta system and an analysis of the impact of the Candler Park Station on residential property values.

General Description

The Metropolitan Atlanta Rapid Transit Authority (MARTA) was created in 1965 by an act of the Georgia General Assembly. In November, 1971, the citizens of DeKalb and Fulton Counties approved by referendum a rapid transit system for the Metropolitan Atlanta area. The proposed system consists of 52 miles of dual rail tracks with 39 stations. The hub of the system is located at Five Points, the center of Atlanta's central business district. Four main rail lines extend radially from this hub with additional rail lines branching off each

line (see Figures I and II).

The transit system will be a combination of aerial, at-grade, and subway lines. Sixteen miles of rail line and seven transit stations will be aerial; 26 miles of rail line and 19 transit stations will be at-grade; and 10 miles of rail line including 13 transit stations will be subway.

Analysis of the Candler Park Station Site

The Candler Park Station site for the MARTA system was selected for a detailed study of the impact of a rapid transit station upon residential property values. The analysis was conducted according to the research strategy described in the previous section. This particular station site was chosen for the following reasons:

(1) The neighborhood is residential in character with single-family homes and small apartment buildings.

(2) The station is located on the first segment of the transit system to begin operation in December, 1978 (see Figure II).

(3) The station is located in only one jurisdiction, the city of Atlanta.

(4) Specific data for neighborhood real estate sales prices were obtainable.

The Candler Park Station is situated on the East Line approximately 3.3 miles east of Five Points. The station is located north of the Georgia Railroad and east of the inter-

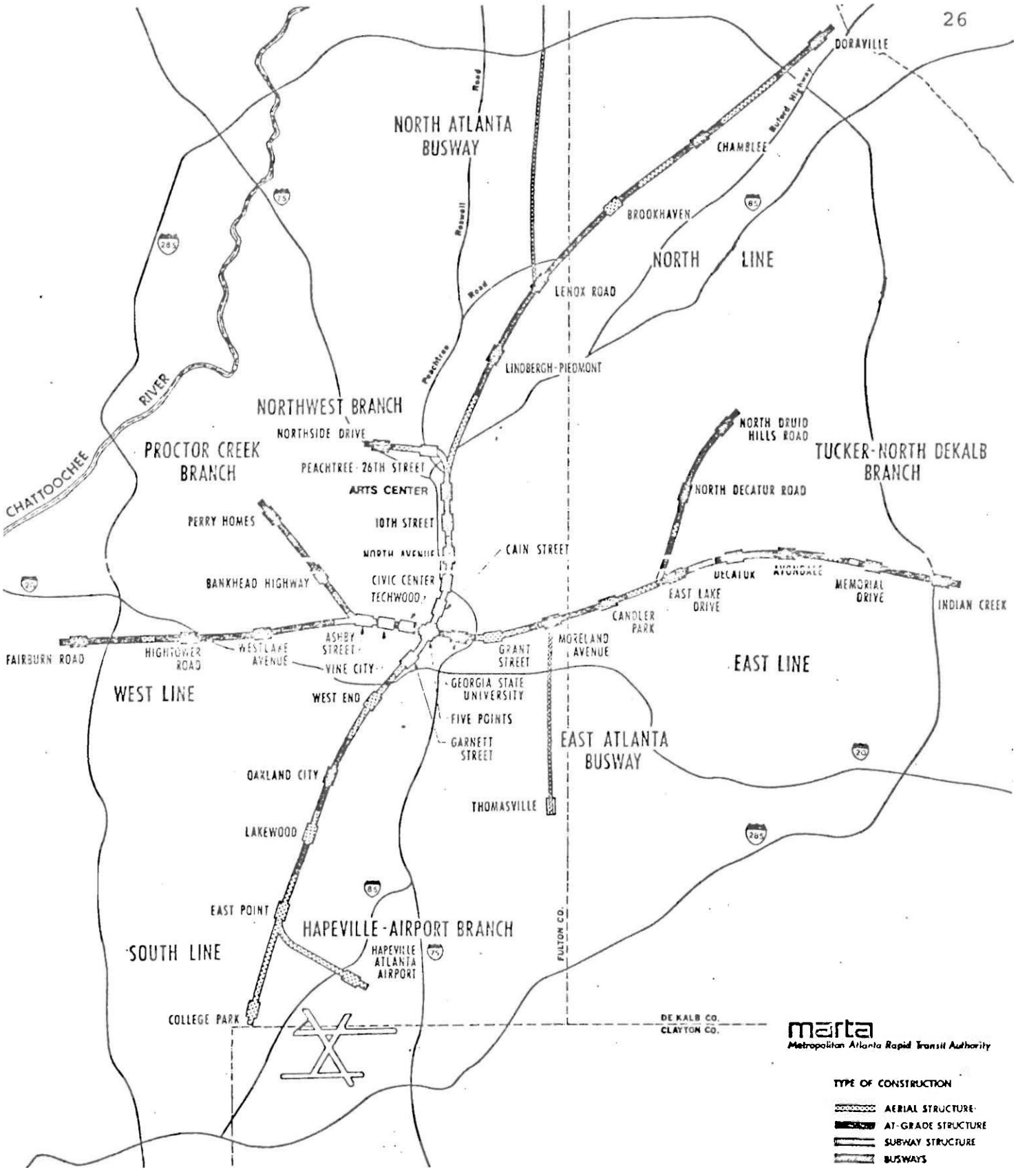

Figure I. The MARTA System

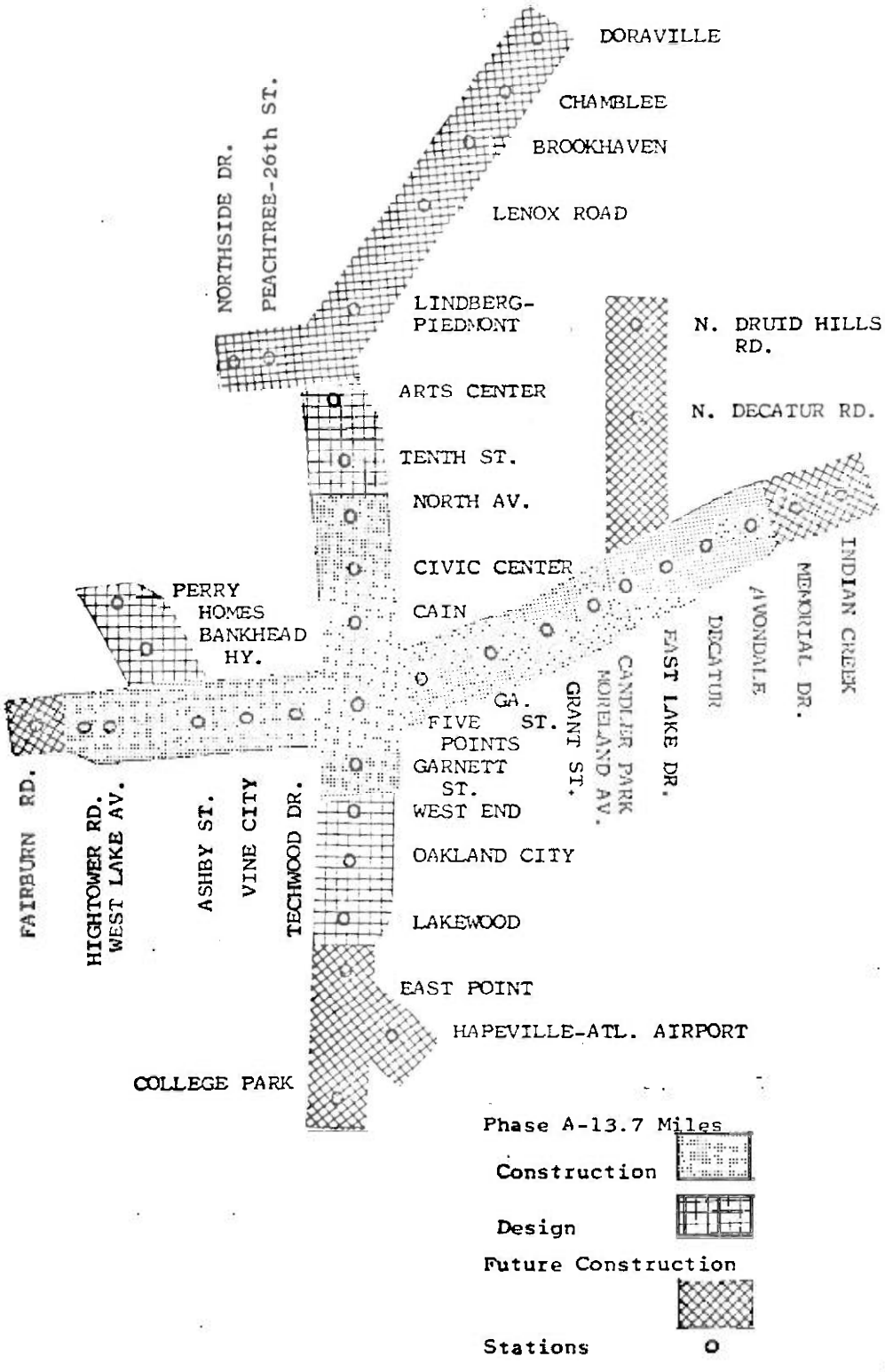

Figure II. MARTA Construction Phases

section of Whitefoord Avenue and Oakdale Road with DeKalb Avenue (see Figure III).

The station is an at-grade facility with a center platform and entrance from a mezzanine above. The transit station is classified as a residential neighborhood station by the City of Atlanta. This classification is based on the development potential and the population served by the station. The Candler Park Station will also serve as a transfer point between the Tucker-North DeKalb and East Lines.

About 800 parking spaces will be provided for commuters who will use the train. MARTA estimates that approximately 2,300 persons will utilize the station each hour by 1995 during morning and evening peak periods.

The most significant fact to consider for the analysis of the station area is the time sequence of events for the MARTA system and for the Candler Park Station site. Construction of the Candler Park Station began in early 1975, and is scheduled to be completed by 1977. The East Line is scheduled to begin testing in 1977, and be open for service by December, 1978. A detailed schedule for the development of the East Line and Candler Park station is as follows: [29]

Phase	Year
Preliminary Design	1973
Acquisition of the Station Site	Jan.-June 1974
Construction	1975
Equipment Installation	1976
Pre-Revenue Testing	1977
Open for Service	1978

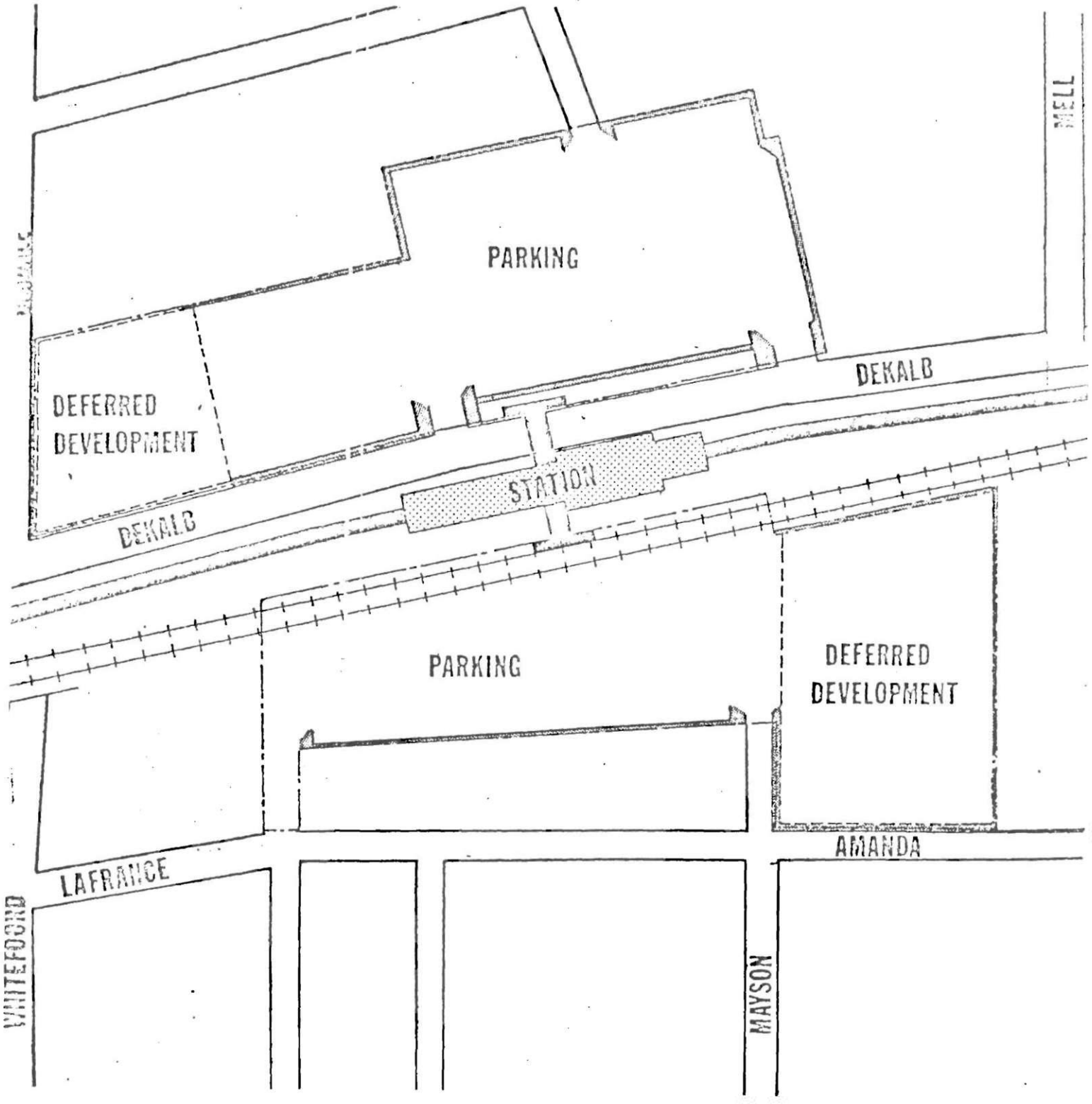

Figure III. The Location of the Candler Park Station

Probably the most significant of these dates are 1973 and January-June 1974. The first recognizes the existence of the station site, and the second indicates the acquisition of the exact parcels for the station site, eliminating important uncertainty.

Description. [31] The Candler Park Station is located just north of the Georgia Railroad, which forms a boundary between the Candler Park and Edgewood neighborhoods. The Candler Park neighborhood is a predominately white community located to the north. Edgewood is a black community located south of the railroad.

Candler Park is comprised primarily of older single-family homes, some of which have been converted to duplex and multi-family use. Fairview Road forms the northern boundary of the area, and the most expensive homes in the neighborhood are located on this street. The more attractive and newer homes are located to the north of McLendon Avenue. The area south of McLendon Avenue is the oldest part of the neighborhood. Homes are one or two story, frame, and on small lots. Most were built in the early part of the century, and their style is characteristic of this period. The exteriors of the homes are often architecturally unique.

Many of the homes in Candler Park are sub-standard, due to the advanced age of both the structures and residents. In recent years, the housing turned over from its original owners

and many structures became renter occupied or subdivided. In other cases, elderly residents have not been able to make necessary improvements. Recently, the area has become attractive to younger middle class residents who are buying and renovating the older homes.

The Edgewood neighborhood consists of a large variety of housing types, ages, and conditions. The majority of the houses were built after 1940, making Edgewood newer than Candler Park. Single family homes dominate the neighborhood, but a large number of apartments are scattered throughout the area.

Single-family homes in the Edgewood community are generally small, frame structures on small lots and were built much earlier than the apartment buildings in the area. Many of the homes are substandard while others are well maintained. In the northern part of Edgewood, near the MARTA station, houses are somewhat larger and more attractive. Most of the housing in Edgewood, both apartments and single-family homes, is renter occupied.

Map Analysis. The first step taken in determining the impact of the Candler Park Station on sales prices of houses was to establish an area of maximum influence which the station had in the neighborhood. For this study, a radius of one-half mile around the station was used. This area within a one-half mile radius was selected for analysis for the following reasons:

(1) From observations made by urban planners and economists analyzing rapid transit systems, the area within a one-half mile radius has been noted as the area of immediate impact. [31, 32]

(2) A walking distance of one-half mile has been established as a maximum limit within which people will likely depend upon the transit system as a source of transportation. [33]

(3) This area also corresponds with the study area used in the Atlanta Regional Commission's (ARC) Transit Station Area Development Studies. [34]

Based upon this information, one-half mile radius of the Candler Park Station was delineated on existing base maps. A one-quarter mile area was then demarcated within this one-half mile distance from the station. This one-quarter mile distance was selected because any area smaller than a one-quarter mile radius was considered insufficient in size to provide a sample of sales price trends. Finally, a one-quarter mile area was delineated outward from the one-half mile radius of the station. This area served as a control area and was considered to be large enough for an accurate comparison of sales price trends. These three data collection areas are shown in Figure IV (page 33) and are designated as:

Area I - one-quarter mile radius of the Candler Park Station

Area II - one-half mile radius of the Candler Park Station, excluding Area I

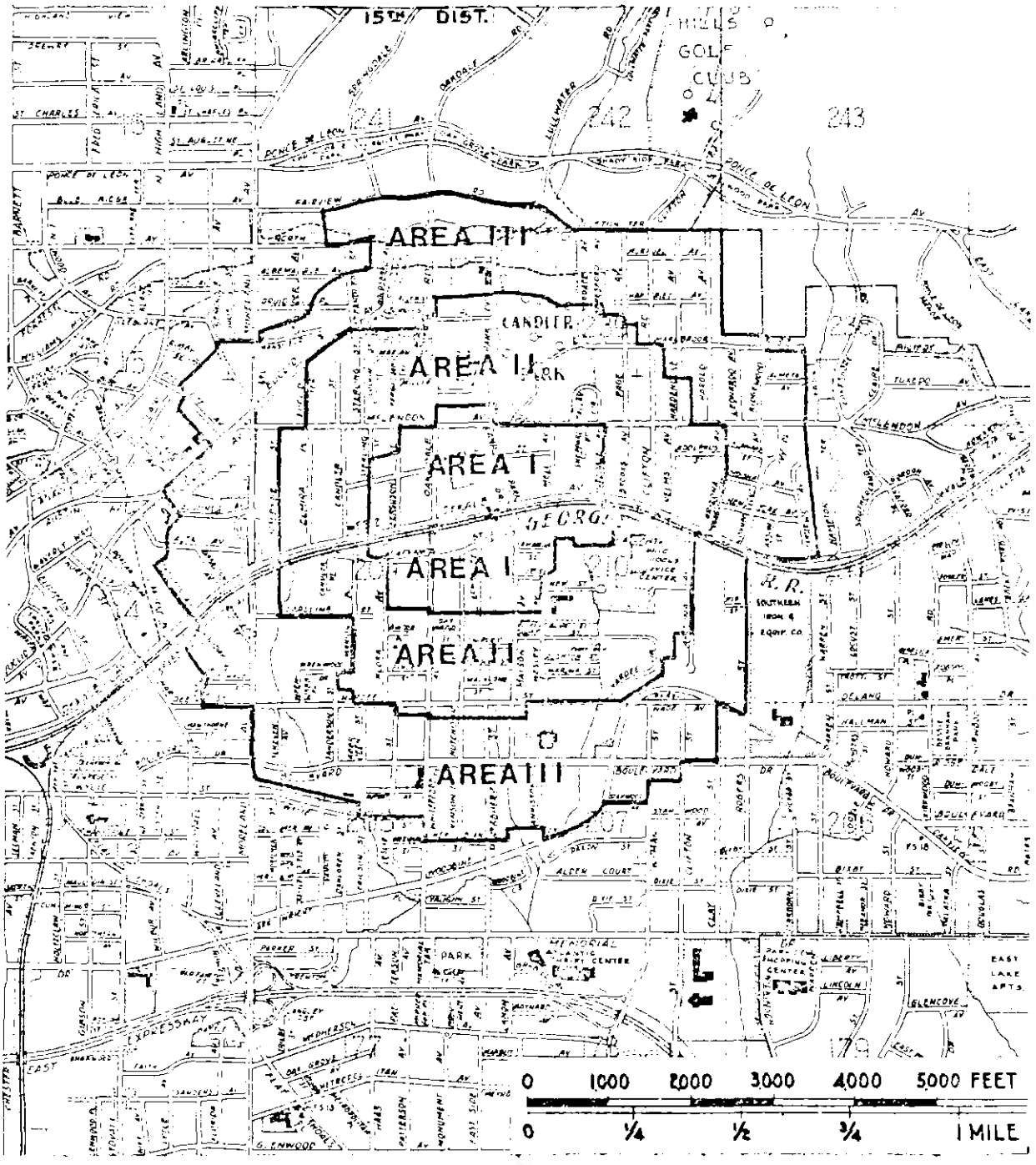

Figure IV. Candler Park Data Collection Areas

Area III - the control area.

The second step taken in determining the impact of the Candler Park Station upon sales prices of houses was to list the streets in each area (see Appendix A-1). This step was necessary because the residential sales transactions in the real estate reports are listed by street address.

The final step involved a listing of market transactions within each area by street and date of sale from the data obtained from the real estate sales reports (see Appendix A-2). These sales transactions were then arranged according to increasing value in order to determine the median sales price of a single-family house.

Property Transactions. A comparison of sales prices of single-family houses provided the first measure of the impact of the Candler Park Station. The data base consisted of approximately 876 residential property sales between June 1972 and May 1977. This date represented a two-year period before the acquisition of the first parcel for the station site by MARTA. It was also chosen as a starting point since the Land Data Corporation started publishing the real estate reports, "Residential Today" in June, 1972. The data was screened as to include only those sales that represent valid market transactions. Sales prices in the Land Data real estate reports that do not represent valid market transactions are marked with an asterisk. These market transactions were not included in

the data base. Out of the total 876 sales transactions, 662 were selected for analysis.

For comparison purposes, the sales in Area III for the years 1972 through 1977 and the percentage annual increase (with 1972 as the base year) are presented in Table I (page 36) along with the two transit areas (Area I and II) within the Candler Park and Edgewood neighborhoods which surround the Candler Park Station site. The table serves as a basis for the following analysis.

Area III, the control area, includes a total of 362 property transactions occuring between 1972 and 1977. This sample is large enough for a proper comparison of price trends between the control area and Areas I and II.

As indicated in the table, the median price of a home in Area III in 1972 was $15,190. In 1976, the median price increased to $21,250. This represents a 140 per cent increase over the 1972 price. However, in 1977 the median sales price declined to $17,750, or a decline of 16 percent from the previous year. The 1972 to 1977 figures indicate an average increase in sales price of 118 per cent for the area.

Area II, a one-half mile radius of the Candler Park Station site, includes a total of 248 transfers of property in the five year period between 1972 and 1977. An examination of the data in the table clearly indicates an increased property price trend for Area II over and above the increased property price

Table I. Comparative Sales and Percent Increase

Year	Median Sales Price	Percent Increase	Annual Percent Change	Aggregate Percentage
		Area III		
1972	$15,190	--	--	
1973	15,000	99	-1	-1
1974	16,750	110	12	+11
1975	18,600	123	11	+22
1976	21,250	140	14	+36
1977	17,750	117	-16	+20
Average	17,433	118		
		Area II		
1972	13,100	--	--	
1973	16,050	123	23	+23
1974	15,000	114	-7	+16
1975	15,450	118	3	+19
1976	17,700	135	15	+34
1977	20,002	153	13	+47
Average	16,217	129		
		Area I		
1972	10,500	--	--	
1973	16,300	155	67	+67
1974	15,000	143	-8	+59
1975	17,850	170	19	+78
1976	19,200	183	8	+86
1977	24,000	229	25	+111
Average	17,142	176		

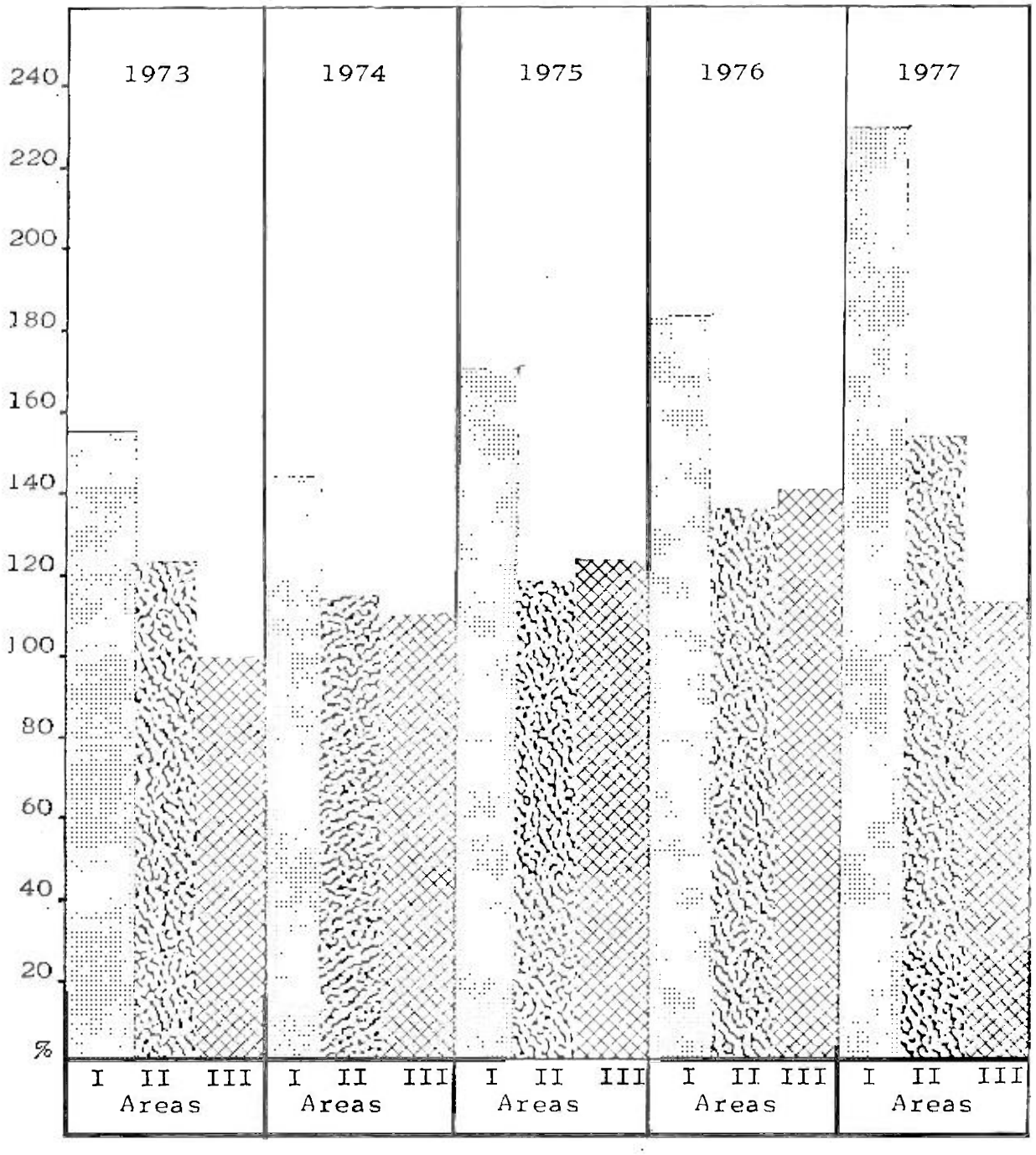

Figure V. 1973-1977 Sales Price Increases by Area
(with 1972 as a base)

trend for Area III, the control area. The 1977 median sales price represents a 153 per cent increase above the 1972 median sales price of $13,100. The average sales price increase over the five year period is 129 per cent as compared to 118 per cent in the control area. It is also interesting to note that the largest annual percentage change occured in 1973, the year in which the design of the station took place. This was the first year in which the station site was recognized.

There is also noteworthy information in respect to specific property sales. The parcels of property in Area II from 1972 to 1977 that have resold within the same period are contained in Appendix A-3. These allow for an annual percentage price increase for the same parcel. It should be noted that the average annual percentage increase for the resales is 55, which is significantly above the average for Area III, the control area.

Area I, a one-quarter mile radius of the MARTA station site, includes a total of 52 property transactions between the years 1972 and 1977. As shown in the table, the median sales price in 1972 was $10,500 as compared to $24,000 in 1977. This represents a 229 per cent increase in price. However, during the same period, the prices in Area III, the control area, experienced only a 117 per cent increase. The average sales price increase in Area I over the five year period is 176 per cent, while Area III experienced a 118 per cent average

increase over the same period. The comparison also shows that Area I has a higher percentage increase for each year. It is believed that this differential is highly significant and that the aforementioned price trend is substantially the direct result of the MARTA system's Candler Park Transit Station location.

A comparison of changes between Areas I and II also reveals differences in price trends. Each year during the period 1972 to 1977, Area I experienced a higher percentage increase in price. The average sales price increase in the five year period between 1972 and 1977 in Area I is 176 per cent as compared to 129 per cent in Area II. This may be due in part to closer proximity to the Candler Park Transit Station.

Like Area II, Area I also experienced its highest annual percentage change in 1973, a 67 per cent increase in sales price. This increase may have been a result of a surge of speculation in the area. As mentioned previously, 1973 was the first significant date in the history of the Candler Park Station site.

The parcels of property in Area I from 1972 to 1977 that have been resold are contained in Appendix A-3. It is interesting to note that Area I, when compared to Area II, experienced a higher average annual increase in price, 96 per cent to 55 per cent.

Assessed Values. A comparison between the assessed values

and sales prices of properties provided the second measure of the impact of the Candler Park Station. The purpose of the analysis was to determine if the discrepancy between the assessed value and sales price of residential property in the transit areas (Areas I and II) is greater than in the non-transit station area, or control area. If the transit station has had an impact on property values, then the discrepancy should be greater in the transit influenced areas.

The first step involved in this method was to determine the assessed value for each piece of property sold in each area (Areas I, II, and III). The second step was to arrange the assessed values by year according to increasing value in order to determine the median value (see Appendix A-2). The third step was to adjust the median assessed value of the property upward to its estimated market value. As mentioned previously, property in Georgia is assessed uniformly at 40 per cent of the estimated market value. The final step consisted of calculating the ratio at assessed value (adjusted) to sales price. This ratio will reflect the discrepancy between the assessed value and sales price of property and is computed by the following formula:

$$\text{Assessed/Sales Ratio} = \frac{\text{Assessed Value}}{\text{Sales Price}}$$

For comparison purposes, the assessed values and sales prices for Area III for the years 1973 through 1977 and the

assessed/sales ratios are presented in Table II (page 42) along with Areas I and II. The table serves as a basis for the following analysis.

An examination of the data in the table reveals that Area III, or the control area, had an assessed/sales ratio of 95 in 1973. This ratio declined to 73 in 1977, with an average of 75 over the period.

The table indicates that Area II had an assessed/sales ratio of 83 in 1973. The ratio remains relatively constant until 1977, when it declines to 60. The average assessed/sales ratio over the four year period is 76, while during the same period, Area III experienced an average of 75. These figures indicate that the discrepancies between the assessed values and sales prices in Area II and III are similar. Based on this analysis, the MARTA transit station has not had a noticeable impact on property values in Area II.

However, comparing changes between Areas I and III for the years 1973 to 1977 reveals substantial differences. The table shows that Area I, the one-quarter mile radius of the station, had an assessed/sales ratio of 85 in 1973. This ratio declined during the four year time period. In 1977, the assessed/sales ratio is 58, significantly lower than the other two areas. Furthermore, Area I has an average ratio of 69 for the period as compared to an average ratio of 75 in Area III. Thus, the Candler Park Station has had an impact on

Table II. Comparative Assessed/Sales Ratios

Year	Median Assessed Value*	Median Sales Price	Assessed/Sales Ratio**
		Area III	
1973	$14,310	$15,000	95
1974	12,585	16,750	75
1975	13,247	18,660	71
1976	13,247	21,250	62
1977	13,045	17,750	73
		Area II	
1973	$13,247	16,050	83
1974	11,922	15,000	79
1975	12,585	15,450	81
1976	13,247	17,700	75
1977	12,057	20,002	60
		Area I	
1973	$13,840	16,300	85
1974	11,922	15,000	79
1975	11,922	17,850	67
1976	10,600	19,200	55
1977	13,910	24,000	58

* Adjusted upward to estimated market value.
** Note: the lower the ratio, the greater the discrepancy.

property values in a one-quarter mile radius of the station. This is evidenced by the fact that the discrepancies between the assessed values and sales prices in Area I are greater than in Area III, the control area.

The San Francisco System

The city of San Francisco and studies concerning the impact of the Bay Area Rapid Transit (BART) system have been selected as a highly significant source for a comparison of the impact of a transit station on residential property values. San Francisco's rapid transit system is in operation and Atlanta is just in the construction stages of the MARTA system.

General Description

The BART District was formed in 1957, which included Alameda, Contra Costa, Marin, San Francisco, and San Mateo Counties. Of these, Marin and San Mateo withdrew shortly before the 1962 bond vote. In November, 1962, the citizens in the three county district approved a $792 million bond issue for the construction and operation of the 75-mile rapid transit system and 34 regional stations - to be repaid from property taxes on every home and business in the three counties. The location of the BART system in the Bay area is shown in Figure VI.

Ground-breaking ceremonies for the BART system were officially held on June 19, 1964. However, eight years passed before the

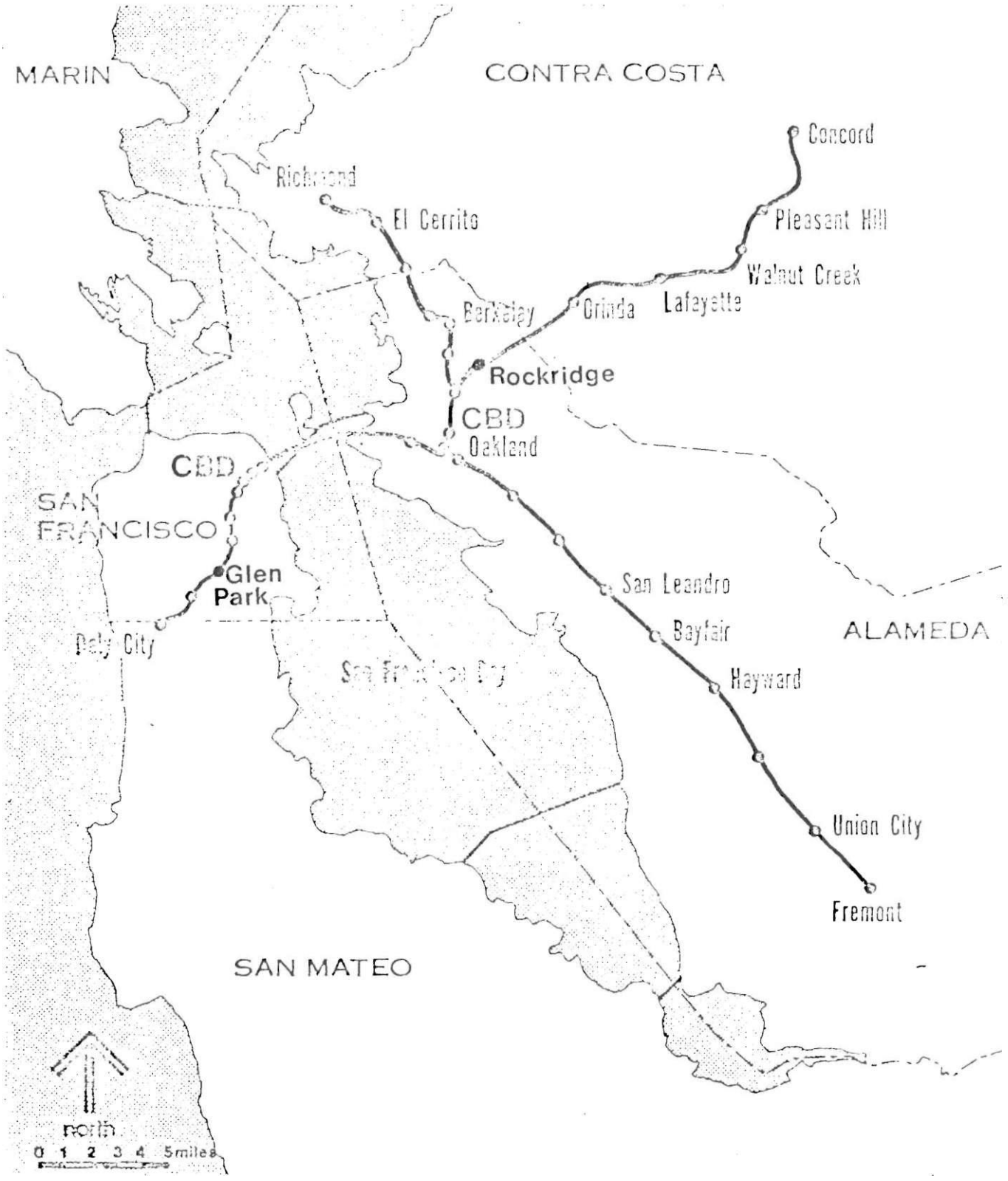

Figure VI. The BART System

first BART trains began regular service. Even then, in September of 1972, only the segment from Oakland to Fremont was operating. Three other lines, Richmond, Concord, and Daly City, were opened during 1973, with the final link, the transbay tube between Oakland and San Francisco, beginning service in October, 1974.

For comparison purposes, two case studies of the impact of BART on residential property values are presented. The first is an analysis of the Glen Park Station site, and the second is an analysis of the Rockridge Station site.

Analysis of the Glen Park Station Site

The Glen Park Station is located on Bosworth Street in San Francisco's Outer Mission District. The station location is residential in character with private homes and small apartment buildings.

An analysis of residential property values near the Glen Park Station was conducted in 1970 by Frederick W. Davis, president of Davis and Associates, a real estate firm in Bethesda, Maryland. [35] In general, a before and after method was used to compare sales in the area. A comparable control area was also used. The study examined residential properties sold in the neighborhood between 1960 and 1967. The amount of change in the sales prices during the seven-year period was measured in both the transit and control areas.

It should be noted that the existence of the station site

was first recognized in 1963. The first parcel bought by BART for the Glen Park Station was in July, 1965, approximately six months after the announcement of the final approval of the location. These two dates are important in the analysis.

In the analysis of the impact of the Glen Park Station on property values in the Outer Mission District, attention was focused on three selected sample areas:

Area 1 - a six block radius of the Glen Park Station

Area 2 - a two block radius of the Glen Park Station

Area 3 - a one block radius and adjacent property to the Glen Park Station

The Outer Mission District includes a large area, approximately three-fourths of which is not within the six block radius of the BART station site. This area served as a control for the study.

Table III (page 47) presents the Outer Mission District sales from 1960 through 1967, with 1960 as a base year. For comparison purposes, the three selected sample areas within the Outer Mission District which surround the Glen Park Station are also included.

A comparison of Outer Mission District sales to Sample Area 1 sales for the years 1963 (the year when the station location was first mentioned) through 1965 shows for Sample Area 1 a higher average sales price each year and a higher annual percentage increase each year. Davis believes that this

Table III. Comparative Sales and Percent Increase of Outer [36] Mission District and Selected Sample Areas, 1960-1967

Year	Average Sales Price	Percent Increase*	Annual Percent Change
Total Outer Mission District			
1960	$15,180	-	-
1961	16,552	109	9
1962	18,628	123	14
1963	20,299	134	9
1964	21,565	142	8
1965	23,440	154	12
1966	22,573	149	-5
1967	23,688	156	7
Sample Area 1			
1960	15,068	-	-
1961	16,956	113	13
1962	18,158	121	8
1963	20,532	136	15
1964	22,697	151	15
1965	23,785	158	7
1966	24,135	160	2
1967	26,337	175	15
Sample Area 2			
1960	13,050	-	-
1961	16,829	129	29
1962	16,505	126	-3
1963	19,065	145	20
1964	18,490	142	-4
1965	22,293	171	29
1966	19,375	148	-23
1967	22,375	171	23
Sample Area 1			
1960	13,617	-	-
1961	**		
1962	23,500	173	73

.... continued

Table III (Continued)

Year	Average Sales Price	Percent Increase*	Annual Percent Change
1963	20,850	153	-20
1964	**		
1965	**		
1966	16,750	123	-20
1967	**		

* 1960 used as a base year ** No figures available

Note: Percentage computations for sample areas 2 and 3 are presented, but the total numbers in these two sample areas are considered by Davis to be insufficient for a proper comparison.

differential is quite significant and that the price trend is a direct result of the Glen Park Station. [37]

Comparison of changes within the two areas for the years 1966 and 1967 (which is after the final approval of Glen Park's Bosworth Street location and also after the first parcel of land at this site was purchased by BART) reveals more important differences between the two geographical areas analyzed. In 1966, the Outer Mission District suffered a decline of 5 per cent in the average sales price, while Sample Area 1 experienced a 2 per cent increase in sales price and represented an average selling price of 7 per cent above the selling price of the total Mission District. The 1967 figures indicate an average increase in sales price of 7 per cent for the total Outer Mission District as compared to a 15 per cent increase for Sample Area 1 in which the average sales price for that year was 12 per cent above the average price for the total district.

Sample Area 2 (containing a total of 94 sales over the seven year period) and Sample Area 3 (containing only a total of 10 sales over the same time span) were considered to be insufficient in sample size for a proper comparison. However, the study examined specific property sales from 1960 to 1967 that were resold within the same period. These sales revealed that the average annual percentage increase for the resales were significantly above the averages for both the total Outer Mission District and Sample Area 1. Davis concluded that the increase

may be a result of the closer proximity to the Glen Park Transit Station. [38]

In summary, Davis' study of residential property values near the Glen Park Station site reveals that BART has had an effect on property values within a six block radius of the station. However, the total number of sales in Area 2 (a two block radius) and Area 3 (a one block radius) is statistically insufficient to permit a valid analysis. Therefore, this study cannot confirm the findings of the Candler Park study, indicating that the impact of a rapid transit station on residential property values decreases in magnitude as the distance from the station increases.

Analysis of the Rockridge Site

An analysis of BART's impact on the sales price of single-family houses in the Rockridge neighborhood in Oakland was conducted in 1975 by Andrejs Skaburskis. The study was performed with the Metropolitan Transportation Commission. [39] Four mathematical models were used in the study to test the null hypothesis asserting that changes in the sales prices of comparable houses did not vary with distance to the BART station against alternatives suggesting that the prices did change with distance. Every model used in the study was based on the assertion that BART, should it have an impact on sales prices, will have one which decreases in magnitude with distance from the station.

The study included observations on 600 sales between March 1968 and January 1975. The "before" observations range in age between March 1968 and December 1972 and the "after" observations between January 1973 and January 1975 (the BART line opened in 1973).

The findings of the study revealed that, based on the sales prices of the houses sold during 1973 and 1974, the Rockridge Station caused a 7.9 per cent decrease in the sales prices of the proximate locations as compared to more distant locations. This observed reduction confirms the null hypothesis for homes sold prior to 1973.

Skaburskis offers two explanations for the findings based on the uncertainty the residents and investors had regarding the future of Rockridge. First, potential residents became concerned over the impact BART related development may have on areas in close proximity to the station and preferred more distant housing. Second, potential developers did not find the station areas to be sufficiently attractive for development to cause them to compete against a well organized community opposed to high-density residential development. [40]

In 1969, the Oakland City Planning Department projected high-density development for the Rockridge Station area. As a result of this projection, people who were considering Rockridge locations became extremely concerned over the impact that the development may have on the community. Consequently,

they preferred the more distant homes beyond Rockridge. A strong and publicized concern for the future of Rockridge as a single-family community emerged in the seventies. In 1974 and 1975, when citizen group protests against the high-density zoning of the Rockridge Station area were being heard by city officials, potential developers and investors waited for the turmoil to settle. They did not find the station areas to be sufficiently attractive for high-density residential development. In Skaburskis' view, "the price decline was caused by residents fearing the development potential and developers fearing the residents." [41]

In conclusion, Skaburskis states that the results of the study indicate that the Rockridge Station did not cause the sales price of houses to increase during the 1968 to 1975 period. [42] The findings support the conclusion that any positive change due to transit improved access was at least equally counteracted by associated non-physical impacts. [43] Therefore, these findings are unique to Rockridge because the decline in sales prices was a result of the uncertainty the potential residents and developers may have had regarding the future of the community. Based on this study, no general statement regarding BART's impact on residential property values can therefore be established.

The Chicago System

The Candler Park MARTA station area's experience is confirmed by an earlier study of the impact of the Chicago transit system on property values. The study provides additional evidence, and its conclusions are presented briefly in the following discussion.

During the early sixties, James L. Davis conducted a study of the impact of the northern branches (Wilson, Ravenswood, and Howard) of the Chicago elevated transit system upon land development and property values in Northern Chicago. [44] The study examined the impact in the northern section immediately following the first operation of the elevated system in 1900, 1907, and 1908. In addition, the study examined what changes had taken place in property values along the elevated line since the areas along the branches reached residential maturity.

In delineating the area of elevated influence in northern Chicago, geometric delineation was applied by marking off one, two, three, and four block zones. The study used a before and after method to compare property value patterns before the operation of the elevated with those after it was constructed. A comparative control method was also used to examine comparative elevated and non-elevated areas. The amount and direction of property value change over time was measured in both the elevated and control areas.

The results of the study showed that the greatest increase in residential property values occured immediately following the first operation of the elevated system. More than 80 per cent of the Howard and Ravenswood Branch stations had their highest property values in the first block zone around the stations. In addition, 40 per cent of these station areas had 1-2-3-4 block pattern of decreasing property values away from the station. All of the elevated station areas experienced both higher property values and a greater increase in property values than their control areas.

An examination of property values in 1962 revealed that the differences in property values between the elevated station areas tended to grow smaller in 1962, as compared with the period immediately following the elevated line's first operation. A general leveling off trend of relatively similar block to block property values characterized the elevated station areas in 1962, with no block zone clearly superior. The average property values advantage in the elevated station areas over the control areas declined from 300 per cent in the immediate post-elevated period to less than 50 per cent in 1962, with two of the control areas having higher values than the elevated areas in 1962. This decline was observed on all three branches of the system. Thus, the elevated station's property values showed a continued but diminished influence. [45]

Therefore, the findings of the study of the impact of Chicago's elevated transit system on residential property values establish that the maximum effect of an elevated station on property values is within a four block (approximately one-half mile) zone and tends to decrease away from the station. These findings confirm the conclusions of the Candler Park study on residential property values.

Conclusions

In the introduction to this chapter two major questions were posed for study. (1) What is the radius of impact of a rapid transit station on residential property values? (2) Does the impact on property values decrease in magnitude as distance from the transit station increases? This section will summarize briefly the conclusions of the chapter.

The comparison between sales prices in the transit areas (Areas I and II) and the control area (Area III) revealed that Areas I and II experienced the greatest annual percentage increase in sales immediately following the approval of the Candler Park Station site. However, a similar surge in property values did not occur in Area III. The comparison also revealed that Areas I and II experienced higher average percentage increases in sales prices over the five year period. These substantial differences show that the Candler Park Station's maximum area of impact on residential property values is a one-half mile radius of the station.

The analysis of the Candler Park Station area also establishes that the impact of the station on residential property values decreases in magnitude as distance from the station increases. This opinion is based on a comparison of Area I sales to Area II sales for the years 1973 through 1977. The comparison shows that Area I had (1) a higher percentage increase each year, (2) a higher average annual percentage increase, and (3) a higher median sales price for each year except 1974 (both areas experienced a decline in sales price in 1974).

The second measure which involved a comparison between assessed values and sales prices indicated that the Candler Park MARTA station had no noticeable impact on the sales prices of single-family houses in Area II (the one-half mile radius, excluding Area I). However, a study of assessed values and sales prices in Area I revealed that the Candler Park Station had affected the sales prices of houses within a one-quarter mile radius of the station.

The findings of the studies of the impact of BART's Glen Park Station in San Francisco and of the northern branches of Chicago's elevated transit system support the conclusion of the Candler Park study, indicating that the impact of a rapid transit station on residential property values has its maximum effect within a six block or one-half mile radius. The Chicago study also establishes that the impact on residential property values decreases in magnitude as distance from the station

increases. The findings of the analysis of the Rockridge BART station's impact on residential property values are unique to Rockridge and cannot be generally applied.

Chapter V

CHARACTERISTICS OF DEVELOPMENT NEAR NEIGHBORHOOD TRANSIT STATIONS

A rapid transit system, by virtue of providing quick and convenient access to and from various parts of the city, can influence the type of development within convenient walking distance of the station. The economic effects of rapid transit are highly beneficial and include the development of housing, office and commercial centers, and appreciation of property values. In addition, rapid transit provides the stimulus for revitalizing older, inner city neighborhoods.

Development trends adjacent to neighborhood rapid transit stations are examined in this chapter. The types of development discussed include: residential, commercial, and office.

Residential

Rapid transit, together with other modes of transportation, provides a direct link between the home and the place of employment. The presence of rapid transit often enables a resident to reduce commuting time substantially. This advantage encourages people to locate their residences within short distances of transit stations.

High-density residential development is generally suited

for areas within close walking distance of rapid transit stations. The immediate area of a transit station usually increases significantly in value. Therefore, high-density development is the most economical form of residential land use immediately adjacent to transit stations. Although land costs are high, the increased accessibility provided by the site is worth the cost. For example, in Camden, New Jersey in an area served by the Philadelphia-Lindenwold High-Speed Line, Camden has constructed a large high-rise apartment development adjacent to a transit station. [46] Several years ago, the City of El Cerrito in Contra Costa County reversed its master plan to allow for high-density residential development around the El Cerrito Del Norte BART station. [47] Similarly in Toronto, during the five-year period between 1959 and 1963, 48.5 per cent or 4,130,000 square feet out of 8,512,000 square feet of all high-rise apartment development in Toronto occurred in four planning districts served by the Yonge Street Subway. [48]

Because of the limited area available and the benefits derived from locations adjacent to rapid transit stations, the development of transit station air rights for residential developments have taken place in several cities including Toronto, Montreal, and Cleveland. Recently, the Atlanta Regional Commission proposed that the air rights over MARTA's parking decks at the Lenox Station site be used for high-density housing. [49]

On the other hand, low-density residential development seldom locates immediately adjacent to rapid transit stations primarily because it is uneconomical to place a single-family development in an area with greater development potential. The presence of the transit facility itself and the increase of vehicular activity in the area make the location undesirable for single-family homes. However, apartment construction can be expected in the vicinity of neighborhood transit stations. These locations appeal to people who like apartment living and convenient access to downtown via rapid transit.

The construction of apartments near transit stations can serve as a buffer between high- and low-density residential developments. In Atlanta, for example, a major land use and zoning issue for years has concerned the location of sites for apartment construction. Apartment developers and single-family neighborhood civic associations have been in conflict over land use matters. Rapid transit can, to some extent, minimize such conflicts by allowing medium-density and high-rise residential structures to be developed on sites adjacent to rapid transit stations. Thus, the pressure for redevelopment in the single-family areas would be reduced. [50]

When a transit stations is located in an older, inner city neighborhood, the surrounding area receives a stabilizing influence from the presence of the station. These inner city generally low- to medium-density neighborhoods are usually

characterized by low-income residents and renters occupying older homes which have been converted into multi-family units. Often the residents cannot afford to make the necessary repairs, thus contributing to further neighborhood deterioration. The transit station should stimulate the renovation of these neighborhoods by attracting suburban residents back to the central city. As the neighborhood improves, owner occupants should displace renters and the income level of residents should increase, thus creating neighborhood stabilization.

Commercial

In developed neighborhoods of the central city, a heavy demand exists for the limited amount of land with primary access to rapid transit stations. The resulting high value of land immediately adjacent to the station leads to the conversion of single-family residential property to alternative land uses, such as retail and office use. In the San Francisco Bay Area, for example, the Walnut Creek Station area has been rezoned for commercial and high-density use. [51] Similar rezoning has taken place at other BART station sites.

Locations adjacent to rapid transit stations are desirable for commercial establishments. The benefits of these locations result from their proximity to a greater concentration of people as compared to other sites. The commercial uses compatible with neighborhood transit stations consist of convenience shops, restaurants, apparel stores, among others. These

businesses are usually part of the station structure itself or located in the immediate vicinity and serve primarily the patrons of the transit system and the office employees and residents in the area.

Rapid transit creates new sites for office buildings. The improved transportation provided by transit to other sections of the city has enabled office buildings to locate adjacent to transit stations outside the central business district. This trend is confirmed by office floorspace construction figures in the suburb of Haddonfield, which is located on the Philadelphia-Lindenwold High-speed Line. During the period between 1961 and 1968, a total of 50,000 square feet of new office space was constructed. However, between 1969 and 1971 (the first three years of the Speed Line's operation), 143,800 square feet of new floorspace in Haddonfield was placed on the market. Further, an additional 79,200 square feet was programmed for 1972-1973. [52]

Office buildings can benefit from locations close to rapid transit stations. In addition to the convenience provided to employees and clients, the firm will benefit from the reduced parking requirements. The space previously needed for parking can now be used for additional office space.

The impact area of a rapid transit station with respect to office development is highly concentrated with most new construction occuring in close proximity to the station. For

example, three of the largest office buildings recently constructed in southern New Jersey are virtually adjacent to the Speedline stations. Further, nearly all of the Haddonfield new office development has occured within a five-minute walk of the Speedline station. [53] The basic reason for locating new office buildings adjacent to transit stations is the avoidance of negative neighborhood effects such as incompatibility with the surrounding single-family housing. If the office building is adjacent to single-family housing, it is likely to suffer in terms of visual aesthetics. Office buildings in close proximity to transit stations are compatible with commercial and high-density uses.

Locations adjacent to neighborhood transit stations are desirable for low-rise office buildings. The types of services suitable for such locations consist of insurance, real estate, health, and law. These professional services are used frequently by residents in the neighborhood.

On the other hand, high-rise office buildings with large numbers of employees and clients seldom locate adjacent to neighborhood transit stations. The traffic involved with these buildings congest the access streets to the station. In addition, they take up large quantities of land for parking which could be developed for some more complementary use.

Thus, the introduction and presence of a rapid transit station in a neighborhood influences land development within

convenient walking distance of the station, as evidenced by historical pattern. These impacts are highly beneficial and focus on the development of housing, retail establishments, and office centers.

Chapter VI

METHODS OF PRESERVING RESIDENTIAL DEVELOPMENT AND CONTROLLING FUTURE DEVELOPMENT

The location of a transit station in a neighborhood can alter land development in the vicinity of the station. As a result of higher land values, increased development is likely to occur. This development must be compatible with other development in the area in order to maintain the existing residential character of the neighborhood. Thus, it is necessary to use legal and administrative controls to accomplish desired development.

Numerous techniques are available to influence and control land use. Careful analysis should be made of conditions at the transit station site before applying any land use control. This chapter discusses the principal controls useful for transit station areas.

Zoning

The most commonly used legal and administrative device for controlling development is zoning. Essentially, zoning is the division of the community into districts, and the regulation within those districts of: [54]

1. The height and bulk of buildings and other structures;

2. The area of a lot which may be occupied and the size of required open spaces;
3. The density of population;
4. The use of buildings and land for trade, industry, residence, or other purposes.

The proper use of zoning is essential if the most desirable land uses are to be obtained around rapid transit stations. Density restrictions are critical. The higher the density allowed, the greater the value of the property and the more intense the development. For example, residentially zoned land which allows only one times coverage (as much floor space as land area) can be bought in Toronto for $3 per square foot. If the permitted density of this residential land is doubled, the value more than triples to $10 per square foot. [55]

Three refinements to the zoning concept which are used to influence and control land use in transit station areas include: (1) the transit station district, (2) incentive zoning, and (3) the neighborhood preservation district.

Transit Station District

One method of achieving desired development is to adopt transit station districts. These districts encourage large planned unit developments.* Transit station districts provide

*Planned unit developments provide increased flexibility in the design and siting of mixed development. Under this technique, a large tract of land is treated as one unit. The developer is permitted to aggregate the total density permitted for each tract into clusters of high-density development. Density increases are allowed in exchange for open space or other amenities.

an opportunity for a city to influence the design and nature of new developments in the vicinity of transit stations. Adoption of the transit station district is usually based on a transit station area land use plan. Acceptable land uses are judged on their compatibility with the transit station location. The City of Atlanta, for example, hopes to adopt a new zoning ordinance including transit station zoning districts which will make provisions for protecting residential areas from commercial encroachment. [56]

Transit impact zones have been proposed to guide the balanced and orderly development of land in close proximity to rapid transit stations of the Washington Metropolitan Area Transit Authority (WMATA) in Montgomery County, Maryland. The utilization of the zones is based upon the concept that future uses surrounding each transit station should be at a density significantly greater than that recommended for land outside of a transit impact area. Thus, the highly accessible land in close proximity to a rapid transit station could be used for a more intensive land use.

The purpose of the transit impact zone is to provide for the comprehensively planned development of transient and non-transient residential, office, commercial, recreational, and public complexes in the areas which are proximate to WMATA rapid transit stations. The combination of these uses

is only feasible and desirable in locations where the transit impact zone is indicated on an adopted master plan. In addition, the transit impact zone would apply only to transit impact areas outside the central business district with a minimum land area of ten acres under single ownership or unified control. Thus, transit impact zones will control the future development of sites located in the vicinity of rapid transit stations in Montgomery County, Montgomery. [58]

Incentive Zoning

Where special transit station zoning districts are not desired, the process of incentive zoning can be used to control development. Incentive zoning includes: (1) development rights transfer, and (2) zoning bonuses.

Development rights transfer has been developed as a mechanism to relieve the market pressures facing many low-density uses within areas zoned for higher density development. Normal market pressures would force the replacement of these low-density uses for new uses with greater economic potential. Using development rights transfer, the owner of a low-density use is allowed to transfer the unused development potential to other site locations in exchange for compensation. This could enable the construction of larger and more profitable buildings on alternative building sites.

Incentive zoning with bonuses is basically zoning that

grants a concession such as increases in allowable floor area to a developer if he in turn is willing to create in his development certain desirable building features. Increases in floor area can be given for certain development within existing zoning districts.

All increases in allowable floor area are contingent upon the provision of certain building features. In San Francisco, for example, it was recognized that with the advent of the BART system incentive zoning would be needed as a method to accomplish balanced and orderly development. A revision to the San Francisco Zoning Ordinance allows varying amounts of square feet of bonus floor area for each feature provided, dependent of size of the development. For each building feature, there is a maximum percent bonus which the developer may not exceed. For example, the ordinance allows a 20 per cent increase in floor area with the construction of direct access from the building to a transit station. The quantity of bonus floor area for other features, such as proximity to a station, multiple building entrances, and sidewalk widening, can be seen in Appendix A-4. [59]

When establishing a system of bonus floor areas, certain principles must be considered. First, the purpose of each incentive should be well defined. In addition, each building feature for which a bonus is given should be suited to the needs of the area. Finally, the quantity of the bonus should

be property scaled. For instance, if the bonus is insufficient, the desired building feature may not be economically feasible and thus not provided. If the bonus is too large, the additional floor area allowed will be out of proportion to the public advantage of the feature provided.

Neighborhood Preservation District

In addition to the transit station district, another method of preserving residential development is the adoption of neighborhood preservation districts. These zoning districts apply to specific neighborhoods in the city which reflect the basic physical characteristics and quality of life generally found in historical neighborhoods. With the advent of rapid transit, negative influences in the form of land speculation and uncontrolled non-residential development could bring about the destruction of neighborhoods surrounding transit stations.

One strong feature of the neighborhood preservation district is the ability to preserve existing structures and activities in neighborhoods. Redevelopment is prohibited in such districts. Since the neighborhood preservation district would apply only to areas outside the transit station area, higher density transit related development could take place within the immediate vicinity of the transit station. The areas in close proximity would be under the control of the transit station district. Thus, the two zoning districts would be used to complement each other.

Leasing of Excess Property and Air Rights

In the course of land acquisition for the construction of a rapid transit system, land is often acquired which is not needed once construction is completed. This will occur as entire parcels of land are taken when only a part of the parcel is needed for transit facilities. This additional land, especially when located near a station and used in conjunction with air rights over transit facilities, presents a unique opportunity for development.

Through transit system or public ownership of this land, control can be exercised over development. The excess property or air space can either be sold to developers or leased on a long-term basis.

Of cities which have built rapid transit systems in recent years, Toronto has had the most experience in the development of air rights and property around their system. The City of Toronto owns approximately 2,900,000 square feet of land and air rights separated into 61 blocks and running a distance of six and one-half miles. [60] The development of these properties is generally done on a long-term lease basis. The lease serves as a control over what will be developed in close proximity to rapid transit stations. The lease agreement is for a period of 33 years with two rights of renewal, each for a similar period of 33 years. [61]

Among other restrictions, the lease requires the developer

to submit plans of the proposed development. In addition, the proposed development must be approved by the City of Toronto and the Toronto Transit Commission and must conform to the zoning of the local municipality. Further, the desirability of the proposed development is considered in terms of its influence on the development of adjoining lands. Excerpts from the Toronto Transit System's lease agreement are contained in Appendix A-5. There is thus strict public control over what is developed in close proximity to rapid transit stations in Toronto. [62]

Therefore, development controls, regardless of their composition, are necessary to preserve existing and future residential development. The development controls useful for transit station areas include long-term leases and numerous zoning techniques. Although each offers a partial solution, land development around rapid transit stations will be more coordinated if these controls are used to complement each other.

Chapter VII

CONCLUSIONS

The experience of the past century indicates that changes in the mode of transportation can influence the size and form of urban development. The early growth patterns of many cities were established by railroad tracks radiating out from the central business district. Development was concentrated in a narrow band along these tracks. Subsequent development occured as the railroad tracks were further extended. However, these early development patterns were later influenced by the automobile. The expansion of the highway system sharply reduced the city's dependency on rail. Consequently, the shape of the city and its growth patterns changed. The introduction of a rapid rail transit system into a region can also have a significant impact on the pattern of urban development. This is particularly true as evidenced by the recent experiences of both Toronto and San Francisco.

The construction of rapid transit stations in neighborhoods is commonly believed to cause increases in property values, resulting in new high-density development, such as office and commercial complexes. However, many additional factors influence land use and land value in the vicinity of these stations. These factors include: distance from the central

business district, zoning, surrounding land uses, site elements (e.g., topography, hydrology, soils, vegetation, and land ownership), availability of public services, and accessibility. The transit station is only one of the many factors influencing the development of properties in the vicinity.

Although increased development is likely to occur, the location of a rapid transit station in a neighborhood does not automatically result in a conversion to high-density development. No general statement regarding the amount and type of development which can be attracted to a particular transit station location can be made without first examining all the influencing factors (cited above) which exist in the neighborhood. If the neighborhood has a high potential for redevelopment based on land value, the location of the transit station should result in a conversion of single-family residential properties to alternative land uses.

Therefore with the construction of rapid transit stations in neighborhoods, consideration must be given to their effect on residential property values. The neighborhood surrounding the transit station is likely to experience higher property values. An understanding of the extent of the effect of rapid transit on residential property values is important to identify the potential area of impact of a transit station on land development in the neighborhood.

The specific study of MARTA's (Metropolitan Atlanta Rapid Transit Authority) impact on residential property values may provide important information concerning the impact of rapid transit on property values in general. Up to now, the effects of rapid transit on residential property values has been unclear. There is essentially no quantitative evidence concerning this impact of rapid transit. However, the Candler Park study does indicate that rapid transit has a significant effect on the value of residential properties within inner city neighborhoods. This area of influence appears to be within a one-half mile radius of the Candler Park Station. Beyond that distance, the station has had no influence. The influence on property values increases as distance to the station decreases.

If property values increase significantly in the neighborhood surrounding a rapid transit station, the single-family properties in close proximity to the station will likely be replaced by higher density development. This development consists mainly of apartments, office centers, and commercial establishments. The high-density uses are generally located immediately adjacent to the station with lower density uses located near the existing single-family areas.

Locations near rapid transit stations are desirable for many types of development. This development must be compatible with other land uses in the area in order to maintain the existing residential character of the neighborhood. Therefore,

development controls are necessary to influence and regulate land use. These controls include long-term leases and numerous zoning strategies, such as incentive zoning and the adoption of transit station and neighborhood preservation districts. However, none of them alone can properly control land use. Desirable land development around rapid transit stations can only be accomplished when these controls are used in a coordinated manner.

The conclusions of the study are encouraging because they contribute to a greater understanding of the effect of rapid transit on neighborhood development and residential property values. Four conclusions are suggested by the study.

First, the "zone of influence" or impact area of a rapid transit station can be rationally defined. This in itself is an important finding for planning purposes. Knowledge of the area of impact will assist planners in preparing transit station area development plans. Additionally, the finding provides a rational basis for the planning and programming of services and facilities essential to future needs.

Second, the findings indicate that the influence of rapid transit is highly concentrated, with most new construction occuring in close proximity to the station. High- and medium-density development, such as commercial, office, and residential, can be expected to locate immediately adjacent to the station. Generally, this would mean within a one-quarter mile radius.

The existing single-family areas outside the one-half mile radius of the transit station will likely remain residential.

Third, when rapid transit stations are located within inner city neighborhoods, the surrounding area will receive a stabilizing effect from the presence of the station. These neighborhoods are usually characterized by renters and low-income residents occupying older homes. The transit station provides the stimulus for revitalizing these older, inner city neighborhoods by attracting suburban residents back to the city. The presence of the station and new transit related development encourages existing residents to upgrade their properties as well.

Finally, the factors (i.e., distance from the central business district, zoning, surrounding land uses, site elements, availability of public services, and accessibility) influencing the conversion of property to alternative land uses are identified. By examining these factors which influence the conversion of property in a neighborhood, it is possible for the planner to determine the future development of the area surrounding the transit station.

Unfortunately, very little additional information on the impacts of rapid transit stations is available for comparison purposes. The only way to test the conclusions of this study is the application of these findings to other inner city neighborhoods. In the meantime, it is important that impact

analyses of urban rapid transit systems be pursued further. It is hoped that this study will be a contribution to this effort.

APPENDIX

APPENDIX A-1

STREETS USED IN THE ANALYSIS OF THE CANDLER PARK STATION SITE

Aberdeen St.
Adolphus St.
Allen St.
Alta Av.
Almeta Av.
Alva St.
Amanda St.
Anniston Av.
Arizona Av.
Austin Av.

Benning Pl.
Beresfore Av.
Binder Pl.
Boulevard Dr.
Brantley St.
Brooks Av.

Callan Cir.
Candler Park Dr.
Candler Pl.
Candler St.
Caroline St.
Carlton Alley
Casson St.
Chipley St.
Clay St.
Clifton Rd.
Clifton St.
Clifton Ter.
College Av.
Colquitt Av.
Colvin St.
Connecticut Av.

DeKalb Av.
DeGress Av.
Delaware Av.
Druid Pl.

Fairview Rd.
Felder St.
Ferguson St.
Finley St.
Fir St.
First St.
Flora Av.
Foote St.

Glendale Av.
Goldsboro Rd.

Haralson Av.
Hardee Cir.
Hardee St.
Hardendorf Av.
Harold Av.
Harriet Av.
Hayne St.
Hillcrest Av.
Holiday Av.
Hooper St.
Hutchison St.

Indiana Av.
Iverson St.
Ivy Pl.

Josephine St.

Kensington Av.

LaFrance St.
Leonardo Av.
Leslie St.
Lowry St.

Macklone St.
Magnolia St.
Mathews St.
Mayson Av.
McLendon Av.
Mell Av.
Meridan St.
Miller Av.
Miller St.
Montgomery St.
Moreland Av.
Muriel Av.

Nelms St.
New St.
New York Av.
North Av.

Oakdale Rd.

Page Av.
Ridgewood Rd.
Rodgers St.
Rushton St.
Rutledge St.

Sanderson St.
Screven St.
Second St.
Seminole Av.
Sheppard Pl.
Sinclair Av.
Stanwood Av.
Sterling St.

Terrace Av.

Vinson Dr.

Wade Av.
Wade St.

Appendix A-1 (Continued)

Dupont Av.
Elmira Pl.
Euclid Av.
Euclid Ter.
Mansfield Av.
Marion Pl.
Marion St.
Marlbrook Dr.
Marona St.
Watson St.
Wesley Av.
Whitefoord Av.
Woodbine Av.
Wrenwood Pl.
Wylie St.
Wyman St.

APPENDIX A-2

RESIDENTIAL PROPERTY TRANSACTIONS

Area I

Street Address	Land Lot	Sales Price	Assessed Value*	Date of Sale
1493 McLendon Av.	210	20,500	7,893	11/16/72
1422 Iverson St.	209	4,000	3,073	11/18/72
1368 Iverson St.	209	13,900	4,346	10/16/72
1548 DeKalb Av.	210	4,000	6,995	9/14/72
1463 LaFrance St.	210	10,500	2,384	10/20/72
1377 McLendon Av.	209	9,000	4,769	6/16/72
1595 McLendon Av.	210	16,000	5,299	6/30/72
348 Mell Av.	210	8,000	4,505	8/25/72
320 Candler Pk. Dr.	210	18,600	5,830	7/31/72
376 Candler Pk. Dr.	209	15,000	5,246	12/14/73
1410 McLendon Av.	240	12,500	5,245	12/27/73
1369 Iverson St.	209	20,500	5,362	12/22/73
235 Lowrey St.	209	4,649	3,380	4/3/73
1423 McLendon Av.	209	17,850	6,253	5/23/73
351 Candler Pk. Dr.	210	16,300	5,537	3/12/73
328 Candler Pk. Dr.	209	21,500	6,094	8/7/73
1511 McLendon Av.	210	20,700	5,564	11/28/73
328 Candler Pk. Dr.	209	13,500	6,094	1/19/73
380 Candler Pk. Dr.	209	19,000	5,299	2/28/74
1447 Iverson St.	209	4,500	3,180	2/14/74
315 Whitefoord Av.	209	11,000	**	1/8/74
1507 McLendon Av.	210	9,300	3,444	2/12/74
1410 McLendon Av.	240	12,500	5,245	1/27/74
376 Candler Pk. Dr.	209	15,500	5,246	7/22/74
376 Candler Pk. Dr.	209	18,600	5,246	6/18/74
298 Ferguson St.	209	15,000	4,504	6/20/74
299 Ferguson St.	209	17,000	3,974	7/15/74
321 Ferguson St.	209	10,500	4,080	7/1/74
1426 McLendon Av.	240	16,650	5,537	6/4/74
372 Candler Pk. Dr.	209	13,000	4,034	11/1/74
381 Whitefoord Av.	209	15,000	**	10/30/74
351 Candler Pk. Dr.	210	14,000	5,537	9/12/74
355 Candler Pk. Dr.	210	16,000	4,504	9/6/74
375 Candler Pk. Dr.	209	14,550	4,240	12/26/74
195 Flora Av.	209	23,500	6,890	12/4/74

Street Address	Land Lot	Sales Price	Assessed Value*	Date of Sale
1359 McLendon Av.	209	19,000	4,769	2/18/75
1527 McLendon Av.	210	17,200	4,239	4/18/75
308 Ferguson St.	209	18,500	3,710	9/30/75
344 Mell Av.	210	16,000	4,770	10/30/75
1595 McLendon Av.	210	28,000	5,299	8/19/75
327 Mell Av.	210	10,500	5,034	6/9/75
316 Ferguson St.	209	19,500	5,936	11/26/75
1320 Iverson St.	209	15,000	5,564	11/25/75
1507 McLendon Av.	210	11,000	3,444	10/15/75
348 Mell Av.	210	20,000	4,504	12/31/75
299 Ferguson St.	209	20,500	3,974	3/22/76
372 Candler Pk. Dr.	209	29,500	5,034	7/28/76
375 Candler Pk. Dr.	209	19,200	4,240	8/27/76
1447 Iverson St.	209	17,600	3,180	10/29/76
1404 McLendon Av.	240	13,000	7,870	11/9/76
1377 McLendon Av.	209	24,000	4,769	1/3/77
1599 McLendon Av.	210	25,000	5,564	3/4/77
382 Mell Av.	210	20,000	5,564	4/26/77
	Area II			
346 Clifton Rd.	210	10,500	4,546	12/29/72
350 Clifton Rd.	210	11,000	4,954	12/29/72
1703 McLendon Av.	210	14,500	5,246	9/7/72
86 Montgomery St.	207	9,100	4,504	9/18/72
166 Flora Av.	209	4,800	6,703	10/10/72
1728 Adolphus St.	210	12,500	3,709	9/22/72
358 Arizona Av.	210	12,500	4,240	10/5/72
369 Brooks Av.	210	17,000	5,034	9/25/72
370 Brooks Av.	210	16,600	4,664	8/29/72
312 Clifton Rd.	210	13,000	4,770	10/27/72
354 Clifton Rd.	210	11,787	4,504	9/26/72
471 Clifton Rd.	239	12,851	5,829	10/23/72
1584 McLendon Av.	239	14,500	5,564	9/29/72
455 Page Av.	239	15,800	5,299	9/25/72
1257 McLendon Av.	240	17,000	**	10/6/72
419 Oakdale Rd.	240	8,500	4,769	10/31/72
430 Sterling St.	240	10,000	4,504	10/16/72
287 Ferguson St.	209	15,000	4,240	7/31/72
81 Hutchison St.	209	3,000	1,854	8/17/72
261 Josephine St.	209	8,000	4,080	6/1/72
1297 McLendon Av.	209	22,500	7,420	8/25/72
364 Brooks Av.	210	6,500	4,240	6/23/72
337 Clifton Rd.	210	13,200	**	6/20/72
471 Page Av.	239	20,000	6,359	8/30/72

Street Address	Land Lot	Sales Price	Assessed Value*	Date of Sale
542 Candler Pk. Dr.	240	19,600	5,830	6/21/72
526 Candler Pk. Dr.	240	23,500	7,684	8/10/72
442 Oakdale Rd.	240	16,500	4,504	6/1/72
502 Oakdale Rd.	240	4,400	2,226	6/29/72
496 Oakdale Rd.	240	29,000	4,770	7/12/72
549 Oakdale Rd.	240	15,000	5,564	8/9/72
1879 McLendon Av.	210	18,500	**	12/6/73
315 Elmira Pl.	209	17,500	5,193	5/15/73
163 Flora Av.	209	5,600	4,079	5/18/73
179 Marion Pl.	209	13,000	4,662	4/11/73
1349 McLendon Av.	209	17,500	5,299	4/26/73
1315 McLendon Av.	209	15,000	5,829	5/18/73
1714 Adolphus St.	210	7,150	5,564	5/29/73
423 Callon Cir.	239	19,500	6,996	5/22/73
446 Clifton Rd.	239	18,500	5,829	4/25/73
491 Terrace Av.	239	23,000	5,564	5/23/73
1418 Miller Av.	240	20,000	4,239	5/24/73
1452 Miller St.	240	15,300	**	3/13/74
485 Sterling St.	240	14,000	3,380	5/21/73
279 Elmira Pl.	209	16,000	4,084	7/9/73
305 Elmira Pl.	209	13,500	5,245	6/19/73
1309 McLendon Av.	209	12,800	4,663	6/14/73
1287 McLendon Av.	209	17,900	6,412	7/24/73
384 Arizona Av.	210	20,000	7,844	8/14/73
471 Page Av.	239	22,330	6,359	7/13/74
440 Candler St.	240	8,980	4,663	7/17/73
534 Candler Pk. Dr.	240	19,000	6,704	7/26/73
1252 McLendon Av.	240	14,500	5,828	7/31/73
1255 McLendon Av.	209	14,800	5,034	9/15/73
153 Mayson Av.	210	10,000	6,996	11/1/73
1725 McLendon Av.	210	14,950	5,299	8/31/73
417 Clifton Rd.	239	16,800	3,180	10/23/73
411 Hardendorf Av.	239	18,000	6,704	9/12/73
505 Page Av.	239	24,000	5,724	10/2/73
1428 Benning Pl.	240	24,500	7,869	10/19/73
1462 Miller Av.	240	15,700	4,770	9/5/73
490 Sterling St.	240	14,000	4,240	8/29/73
176 Flora Av.	209	10,800	4,954	1/23/73
360 Nelms Av.	210	16,100	4,876	1/4/73
322 Nelms Av.	210	17,500	7,461	3/5/73
331 Elmira Pl.	209	18,000	4,345	1/22/74

Street Address	Land Lot	Sales Price	Assessed Value*	Date of Sale
149 Whitefoord Av.	209	15,000	5,564	2/21/74
360 Clifton Rd.	210	16,000	4,664	2/25/74
470 Clifton Rd.	239	30,000	7,419	2/25/74
1576 McLendon Av.	239	15,000	4,770	1/3/74
440 Candler St.	240	14,500	4,663	3/6/74
161 Lowry St.	209	6,000	2,914	3/11/74
98 Whitefoord Ave.	209	19,500	6,624	3/6/74
405 Clifton Rd.	239	22,000	5,945	1/16/74
476 Clifton Rd.	239	15,900	4,239	4/1/74
1610 McLendon Av.	239	19,900	5,564	4/23/74
475 Page Av.	239	22,000	5,829	4/17/74
521 Terrace Av.	239	20,200	5,034	5/31/74
506 Candler Pk. Dr.	240	9,000	4,504	4/3/74
525 Candler Pk. Dr.	240	31,069	7,684	5/30/74
429 Euclid Ter.	240	12,100	5,829	3/27/74
1196 DeKalb Av.	209	11,000	3,974	7/17/74
1315 Iverson St.	209	14,000	4,239	5/30/74
1245 McLendon Av.	209	12,000	5,300	6/26/74
1279 McLendon Av.	209	15,000	5,829	7/19/74
1309 McLendon Av.	209	13,500	4,663	6/28/74
336 Sterling St.	209	12,200	4,080	5/30/74
336 Sterling St.	209	14,935	4,080	6/13/74
1705 Adolphus St.	210	14,500	3,974	6/18/74
1728 Adolphus St.	210	14,100	3,709	6/26/74
340 Brooks Av.	210	5,200	4,240	6/19/74
351 Brooks Av.	210	18,200	4,504	6/3/74
373 Brooks Av.	210	14,100	4,769	7/24/74
438 Clifton Rd.	239	4,500	6,889	5/7/74
511 Page Av.	239	19,800	6,094	7/2/74
1433 Miller St.	240	18,800	794	7/31/74
496 Oakdale Rd.	240	14,250	4,770	7/31/74
344 Candler St.	209	16,550	4,662	10/30/74
331 Elmira Pl.	209	2,000	4,345	9/3/74
1314 Iverson St.	209	10,400	4,954	9/5/74
1269 McLendon Av.	209	10,000	7,154	10/11/74
331 Brooks Av.	210	5,350	3,180	9/20/74
131 Mayson Av.	210	2,400	3,444	9/30/74
316 Nelms Av.	210	18,000	6,784	9/16/74
432 Clifton Rd.	239	24,900	6,359	10/31/74
1620 McLendon Av.	239	24,500	6,412	9/10/74
462 Page Av.	239	36,000	6,529	10/3/74
440 Candler St.	240	15,643	4,663	10/16/74
446 Candler St.	240	8,500	11,080	10/11/74
1277 Euclid Av.	240	16,800	2,755	10/1/74
443 Euclid Ter.	240	12,500	5,045	9/30/74
520 Oakdale Rd.	240	27,500	6,094	10/21/74

Street Address	Land Lot	Sales Price	Assessed Value*	Date of Sale
431 Hardendorf Av.	239	16,850	6,094	1/3/75
430 Sterling St.	240	22,500	4,504	1/24/75
339 Candler St.	209	12,500	3,710	4/21/75
339 Candler St.	209	18,500	3,710	4/21/75
335 Clifton Rd.	210	10,400	4,770	1/10/75
291 Elmira Pl.	209	7,800	5,034	3/21/75
362 Ferguson St.	209	9,300	6,094	5/9/75
122 Flora Av.	209	12,000	2,914	4/11/75
1703 McLendon Av.	210	12,000	5,246	4/4/75
322 Nelms Av.	210	17,300	7,461	3/19/75
466 Clifton Rd.	239	23,000	7,419	1/23/76
431 Hardendorf Av.	239	27,500	6,094	5/21/75
431 Candler St.	240	18,000	5,564	2/22/75
469 Candler St.	240	18,000	4,770	3/12/75
546 Candler Pk. Dr.	240	21,000	5,034	3/26/75
426 Sterling St.	240	24,100	6,094	4/1/75
345 Elmira Pl.	209	12,000	3,974	11/14/75
122 Mayson Av.	209	12,500	3,180	9/27/75
330 Clifton Rd.	210	22,900	3,974	11/17/75
445 Clifton Rd.	239	37,650	7,949	8/29/75
482 Clifton Rd.	239	13,835	6,253	11/25/75
416 Page Av.	239	28,500	5,564	11/10/75
495 Terrace Av.	239	25,500	5,723	10/16/75
439 Candler St.	240	14,500	4,770	9/15/75
1434 Miller Av.	240	26,000	4,769	11/25/75
479 Sterling St.	240	8,000	2,914	9/4/75
480 Sterling St.	240	13,500	5,246	10/29/75
143 Flora Av.	209	16,300	6,704	7/2/75
1596 Foote St.	210	6,300	2,756	6/10/75
1703 McLendon Av.	210	14,600	5,246	8/11/75
325 Nelms Av.	210	10,000	3,710	7/16/75
410 Hardendorf Av.	239	26,500	5,194	7/14/75
411 Hardendorf Av.	239	29,000	6,704	7/9/75
449 Euclid Ter.	240	15,000	4,345	5/29/75
1367 Marion St.	240	17,000	**	6/16/75
420 Oakdale Rd.	240	21,000	10,864	5/31/75
535 Oakdale Rd.	240	26,000	8,480	6/17/75
433 Sterling St.	240	19,000	6,094	8/22/75
434 Sterling St.	240	18,500	4,504	7/31/75
324 Candler St.	209	13,000	6,359	12/18/75
344 Elmira Pl.	209	7,900	5,034	11/18/75
1279 McLendon Av.	209	20,000	5,829	12/15/75
343 Sterling St.	209	8,000	6,359	11/25/75
357 Sterling St.	209	8,700	3,974	12/11/75
312 Clifton Rd.	210	13,950	4,770	12/2/75
90 Mayson Av.	210	9,600	4,240	12/3/75

Street Location	Land Lot	Sales Price	Assessed Value*	Date of Sale
1643 McLendon Av.	238	15,000	**	6/27/75
422 Page Av.	239	3,500	2,914	12/1/75
1277 Euclid Av.	240	15,450	2,755	12/2/75
164 Whiteford Av.	238	12,300	5,299	1/13/76
320 Elmira Pl.	209	16,000	5,564	1/21/76
492 Page Av.	239	17,900	8,744	1/13/76
411 Sterling St.	240	12,500	3,974	2/18/76
307 Candler St.	209	15,000	5,300	3/26/76
291 Elmira Pl.	209	26,000	5,034	4/1/76
360 Elmira Pl.	209	32,750	7,154	3/17/76
1304 Iverson St.	209	16,000	7,154	2/26/76
1245 McLendon Av.	209	21,000	5,300	4/15/76
1255 McLendon Av.	209	15,700	5,034	4/2/76
1333 McLendon Av.	209	7,450	4,504	3/31/76
348 Sterling St.	209	15,500	3,974	3/5/76
340 Brooks Av.	210	12,500	4,240	4/1/76
351 Brooks Av.	210	10,500	4,504	3/1/76
370 Brooks Av.	210	24,000	4,664	3/25/76
317 Nelms Av.	210	25,000	3,179	3/31/76
405 Clifton Rd.	239	27,950	5,945	4/12/76
534 Candler Pk. Dr.	240	32,000	6,704	2/26/76
405 Callan Cir.	239	18,500	4,770	5/18/76
451 Page Av.	239	22,500	5,299	4/30/76
471 Page Av.	239	27,415	6,359	4/30/76
329 Candler St.	209	15,000	4,770	8/13/76
290 Arizona Av.	210	8,500	4,504	8/11/76
370 Clifton Rd.	210	11,600	3,710	8/5/76
324 Candler St.	209	15,994	6,359	6/4/76
325 Elmira Pl.	209	15,500	5,034	7/21/76
340 Elmira Pl.	209	29,500	4,769	6/29/76
351 Sterling St.	209	14,900	7,870	7/9/76
300 Arizona Av.	210	16,500	6,359	6/2/76
353 Nelms Av.	210	24,500	5,564	8/3/76
442 Clifton Rd.	239	24,500	4,769	7/8/76
440 Hardendorf Av.	239	17,500	7,684	7/16/76
447 Hardendorf Av.	239	24,300	5,829	6/30/76
470 Candler St.	240	14,650	3,974	6/9/76
1244 McLendon Av.	240	25,000	10,070	7/14/76
455 Oakdale Rd.	240	18,750	5,299	6/14/76
476 Sterling St.	240	23,600	4,240	6/29/76
306 Candler St.	209	14,500	3,974	11/16/76
301 Elmira Pl.	209	15,000	5,829	11/5/76
350 Elmira Pl.	209	18,000	5,034	10/8/76
1287 McLendon Av.	209	19,500	6,412	9/17/76
143 Whitefoord Av.	209	13,500	4,437	10/11/76

Street Address	Land Lot	Sales Price	Assessed Value*	Date of Sale
1714 Adolphus St.	210	18,500	5,564	9/15/76
284 Arizona Av.	210	24,500	6,624	11/3/76
345 Brooks Av.	210	27,500	3,180	11/18/76
1693 McLendon Av.	210	16,000	4,346	9/13/76
424 Callan Cir.	239	32,500	6,890	9/2/76
455 Candler St.	240	12,500	5,830	10/7/76
526 Candler Pk. Dr.	240	35,000	7,684	9/7/76
1293 Euclid Av.	240	16,000	4,663	10/15/76
1270 McLendon Av.	240	13,800	7,949	8/23/76
1270 McLendon Av.	240	24,000	7,949	10/1/76
1448 Miller Av.	240	14,500	3,815	11/15/76
539 Oakdale Rd.	240	10,950	4,504	10/6/76
469 Sterling St.	240	14,600	3,286	11/5/76
320 Elmira Pl.	209	9,700	5,564	12/20/76
1273 McLendon Av.	209	14,500	5,829	11/26/76
1725 McLendon Av.	210	23,900	5,299	12/31/76
293 Nelms Av.	210	10,500	2,914	11/29/76
421 Callan Cir.	239	33,500	6,360	11/29/76
455 Candler St.	240	27,000	5,830	12/10/76
1263 Euclid Av.	240	18,500	5,034	12/22/76
443 Euclid Ter.	240	20,200	5,034	11/30/76
449 Sterling St.	240	18,400	4,504	10/29/76
62 Montgomery St.	207	20,005	3,074	2/7/77
299 Josephine St.	209	5,500	3,180	1/7/77
1733 McLendon Av.	210	23,850	5,034	2/1/77
321 Nelms Av.	210	13,000	3,816	2/3/77
410 Callan Cir.	239	22,900	5,299	2/14/77
482 Page Av.	239	25,300	5,724	2/1/77
456 Candler St.	240	15,500	5,034	1/28/77
1286 McLendon Av.	240	16,000	4,770	1/24/77
443 Sterling St.	240	26,900	4,770	2/17/77
486 Sterling St.	240	17,200	4,770	2/11/77
292 Candler St.	209	16,250	8,480	3/11/77
350 Candler St.	209	18,300	4,769	3/11/77
311 Clifton Rd.	210	13,500	4,876	2/25/77
343 Nelms Av.	210	16,593	5,034	3/5/77
423 Callan Cir.	239	38,600	6,996	3/16/77
417 Clifton Rd.	239	21,896	3,180	3/1/77
445 Page Av.	239	16,000	5,723	3/2/77
459 Sterling St.	240	23,900	4,240	2/28/77
1273 McLendon Av.	209	21,200	5,829	4/25/77
378 Arizona Av.	210	11,300	3,286	4/26/77
1699 McLendon Av.	210	25,550	4,504	4/14/77
298 Nelms Av.	210	20,000	6,094	3/31/77
495 Page Av.	239	28,000	5,830	4/22/77
469 Sterling St.	240	22,700	3,286	3/31/77

Street Address	Land Lot	Sales Price	Assessed Value*	Date of Sale
		Area III		
1247 Hardee St.	208	15,450	6,359	12/8/72
581 Clifton Rd.	239	22,000	6,359	12/11/72
586 Clifton Rd.	239	16,000	6,704	12/29/72
623 Page Av.	239	13,000	4,770	12/30/72
1483 Fairview Rd.	242	57,400	11,130	12/14/72
1150 Alta Av.	14	17,500	5,054	12/8/72
1090 Alta Av.	14	16,000	5,450	10/16/72
1134 Alta Av.	14	12,000	5,240	10/23/72
1111 Austin Av.	14	16,000	5,440	10/16/72
1054 Austin Av.	14	19,068	7,410	9/8/72
1100 Austin Av.	14	15,190	5,970	7/4/72
1106 Austin Av.	14	13,900	5,490	11/17/72
1112 Colquitt Av.	15	11,300	4,680	10/4/72
1084 Colquitt Av.	15	21,400	6,220	9/11/72
1135 Alta Av.	14	12,000	5,360	8/31/72
1129 Hardee St.	14	14,500	**	7/7/72
1110 Alta Av.	14	5,600	5,350	6/23/72
1124 Alta Av.	14	14,400	5,720	6/6/72
174 Brantley St.	14	19,000	5,180	7/20/72
450 Seminole Av.	15	11,000	6,110	7/1/72
1133 Euclid Av.	15	15,000	3,020	7/30/72
81 Anniston Av.	206	19,094	3,974	9/28/72
31 Montgomery St.	208	15,540	5,830	10/9/72
30 Whitefoord Av.	208	10,684	3,709	10/17/72
1800 DeKalb Av.	211	20,000	4,239	10/19/72
418 Ridgewood Rd.	238	17,490	7,286	12/5/72
1633 Clifton Ter.	239	16,800	5,829	9/7/72
492 Hardendorf Av.	239	17,300	6,094	9/8/72
555 Hardendorf Av.	239	18,800	6,359	9/8/72
451 Harold Av.	239	16,800	4,663	9/28/72
506 Harold Av.	239	18,600	6,889	10/27/72
1296 Euclid Av.	240	9,000	4,080	9/15/72
1483 Fairview Rd.	242	52,500	11,130	10/27/72
144 Clifton St.	207	13,800	4,239	7/13/72
196 Clifton St.	207	13,000	4,663	7/31/72
1294 Boulevard Dr.	208	6,000	4,239	7/12/72
1621 Woodline Av.	208	14,300	3,710	7/12/72
333 Moreland Av.	209	17,500	5,034	5/5/72
292 Oakdale Rd.	209	8,000	3,444	7/2/72
325 Oakdale Rd.	209	14,550	4,954	8/4/72
1840 DeKalb Av.	211	16,500	4,239	7/25/72
565 Clifton Rd.	239	30,200	5,829	7/24/72
1250 Druid Pl.	240	10,500	5,034	7/18/72

Street Address	Land Lot	Sales Price	Assessed Value*	Date of Sale
1251 Druid Pl.	240	6,800	4,664	7/20/72
1369 Euclid Av.	240	13,200	4,770	6/29/72
1100 Austin Av.	14	19,200	5,970	12/21/73
220 Haralson Av.	14	10,200	1,360	12/1/73
224 Haralson Av.	14	12,000	1,360	12/14/73
466 Seminole Av.	15	14,500	6,270	12/11/73
47 Moreland Av.	208	14,900	5,034	7/19/73
482 Clifton Rd.	239	21,000	6,253	12/13/73
452 Harold Av.	239	18,100	3,974	12/14/73
1221 Euclid Av.	240	18,000	6,528	12/27/73
1225 Euclid Av.	240	8,000	6,995	12/27/73
1667 Boulevard Dr.	207	8,500	**	5/14/73
1665 Boulevard Dr.	207	19,000	6,120	3/8/73
67 Vinson Dr.	208	10,200	5,246	4/3/73
325 Oakdale Rd.	209	14,000	4,954	3/6/73
1769 Delaware Av.	211	13,000	4,371	3/16/73
1759 New York Av.	211	15,000	5,299	4/6/73
1845 Almeta Av.	238	33,800	11,924	5/31/73
505 Clifton Rd.	239	29,000	6,094	3/23/73
571 Clifton Rd.	239	16,000	6,253	5/14/73
566 Hardendorf Av.	239	17,100	4,239	4/16/73
561 Harold Av.	239	25,600	6,094	5/8/73
532 Page Av.	239	21,500	6,254	5/29/73
1409 Euclid Av.	240	26,900	5,724	3/28/73
1409 Fairview Rd.	241	42,000	9,540	5/18/73
1626 Boulevard Dr.	207	13,100	4,504	8/30/73
36 Leslie St.	208	15,600	6,359	7/27/73
25 Sanderson St.	208	15,000	4,504	5/30/73
373 Moreland Av.	209	85,000	81,620	6/22/73
310 Oakdale Rd.	209	10,350	4,663	7/23/73
201 Whitefoord Av.	209	13,300	4,504	6/8/73
378 Connecticut Av.	211	8,500	**	8/7/73
410 Leonardo Av.	238	16,500	5,246	6/7/73
1794 McLendon Av.	238	19,000	7,154	8/21/73
462 Ridgewood Rd.	238	27,000	7,869	6/28/73
436 Ridgewood Rd.	238	16,100	5,405	8/10/73
615 Clifton Rd.	239	37,059	11,076	8/27/73
620 Clifton Rd.	239	41,500	8,904	8/22/73
1641 Clifton Ter.	239	27,000	5,829	7/9/73
566 Hardendorf Av.	239	22,000	6,624	8/3/73
543 Terrace Av.	239	20,500	6,295	6/28/73
570 Candler St.	240	13,360	3,974	7/31/73
1340 North Av.	240	36,500	9,274	5/31/73
1453 Fairview Rd.	241	45,000	13,514	6/29/73
1732 Boulevard Dr.	207	12,700	4,662	9/17/73
1304 Boulevard Dr.	208	20,100	7,869	9/13/73
1271 Hardee St.	208	18,000	7,869	10/19/73

Street Address	Land Lot	Sales Price	Assessed Value*	Date of Sale
1199 McLendon Av.	209	9,800	4,770	10/12/73
270 Casson St.	211	11,000	3,444	11/23/73
1773 McLendon Av.	211	12,274	4,346	9/10/73
607 Page Av.	239	15,500	5,830	10/29/73
1296 Euclid Av.	240	11,562	4,080	11/15/73
1258 Mansfield Av.	240	18,900	7,869	10/19/73
1202 McLendon Av.	240	17,500	6,412	9/29/73
1404 McLendon Av.	240	17,000	7,870	9/4/73
1334 North Av.	240	35,300	8,480	9/21/73
1415 Boulevard Dr.	208	17,200	4,196	1/5/73
1282 Boulevard Dr.	208	18,050	3,974	2/14/73
39 Leslie St.	208	16,000	3,974	1/26/73
269 Matthews St.	211	12,300	4,133	3/1/73
552 Clifton Rd.	239	18,800	6,889	1/3/73
944 Austin Av.	14	12,200	3,290	9/27/73
203 DeGress Av.	14	10,000	5,350	10/1/73
1073 Euclid Av.	14	14,000	**	9/25/73
1097 Colquitt Av.	15	18,586	5,150	8/31/73
470 Seminole Av.	15	15,000	7,080	10/16/73
513 Seminole Av.	15	29,700	9,810	11/28/73
930 Austin Av.	14	5,570	3,850	6/26/73
203 DeGress Av.	14	10,000	5,350	7/13/73
1059 Euclid Av.	14	21,300	4,980	9/1/73
1144 Alta Av.	14	12,200	5,340	3/16/73
1149 Alta Av.	14	9,600	5,130	4/14/73
944 Austin Av.	14	8,000	3,290	5/9/73
948 Austin Av.	14	7,500	3,470	5/9/73
950 Austin Av.	14	7,500	3,960	5/9/73
162 Brantley St.	14	10,665	2,990	3/9/73
215 DeGress Av.	14	7,500	2,980	3/29/73
227 Haralson Av.	14	7,500	4,220	4/30/73
234 Haralson Av.	14	12,500	**	5/23/73
909 Austin Av.	14	11,000	3,350	1/16/73
230 DeGress Av.	14	7,500	4,450	1/4/73
552 Page Av.	239	23,500	6,890	6/28/74
1239 Druid Pl.	240	21,500	4,504	6/5/74
1252 Mansfield Av.	240	15,000	4,240	6/24/74
33 Hutchinson St.	208	1,700	**	9/20/74
325 Oakdale Rd.	209	16,850	4,954	10/8/74
190 Whitefoord Av.	209	22,500	5,299	10/28/74
195 Whitefoord Av.	209	8,000	3,444	9/17/74
1484 Iverson St.	210	17,500	5,034	11/1/74
367 Ivy Pl.	211	3,900	3,709	5/31/74
342 Mathews Av.	211	13,500	8,452	11/15/74
1845 Almeta Av.	238	13,500	11,924	10/14/74
320 Leonardo Av.	238	22,500	4,239	8/21/74
418 Ridgewood Rd.	238	18,800	7,286	9/12/74

Street Address	Land Lot	Sales Price	Assessed Value*	Date of Sale
502 Clifton Rd.	239	35,000	7,154	11/7/74
592 Clifton Rd.	239	36,800	6,253	11/1/74
632 Hardendorf Av.	239	19,500	5,564	10/7/74
484 Harold Av.	239	22,250	**	9/5/74
537 Candler St.	240	18,000	5,299	11/20/74
1250 Druid Pl.	240	29,500	5,034	11/1/74
1232 Mansfield Av.	240	11,150	3,710	10/30/74
1236 Mansfield Av.	240	10,150	4,240	10/30/74
1090 Alta Av.	14	15,900	5,450	1/18/74
1074 Colquitt Av.	15	10,000	5,690	2/18/74
1135 Alta Av.	14	14,350	5,360	4/11/74
950 Austin Av.	14	14,150	3,860	5/15/74
923 Degress Av.	14	7,500	**	5/7/74
211 Haralson Av.	14	6,000	3,470	4/23/74
452 Seminole Av.	15	35,000	**	4/23/74
940 Austin Av.	14	7,300	4,010	8/8/74
948 Austin Av.	14	8,300	3,470	5/15/74
1104 Colquitt Av.	15	13,000	5,020	8/30/74
1070 Colquitt Av.	15	17,000	6,540	9/13/74
1080 Colquitt Av.	15	17,000	6,040	9/13/74
1108 Colquitt Av.	15	20,250	4,730	9/25/74
1053 Euclid Av.	15	13,000	**	9/18/74
1621 Woodbine Av.	208	15,700	3,710	2/6/74
1218 Boulevard Dr.	208	19,350	7,302	1/30/74
1768 McLendon Av.	238	25,300	5,829	1/26/74
1505 Boulevard Dr.	207	9,000	638	5/28/74
375 Candler Pk. Dr.	209	17,000	4,240	5/1/74
308 Josephine St.	209	7,500	3,444	5/16/74
373 Oakdale Rd.	209	16,000	3,974	5/8/74
1763 Delaware Av.	211	16,000	4,770	5/30/74
1806 New York Av.	211	5,000	1,856	5/3/74
174 Rogers Av.	211	20,600	9/326	5/3/74
411 Leonardo Av.	239	15,000	3,709	4/30/74
565 Clifton Rd.	239	32,700	5,829	4/4/74
521 Harold Av.	239	20,500	5,193	5/7/74
531 Page Av.	239	20,900	5,724	5/29/74
1265 Druid Pl.	240	27,500	4,504	4/24/74
1229 Euclid Av.	240	29,250	16,960	3/27/74
1215 Mansfield Av.	240	16,500	4,504	4/22/74
1320 North Av.	240	27,000	5,194	4/30/74
568 Whitewoord Av.	240	21,000	**	4/25/74
1377 Fairview Rd.	241	45,100	10,334	3/30/74
1441 Fairview Rd.	241	50,000	9,540	4/29/74
60 Clay St.	206	16,700	4,663	8/20/74
1628 Boulevard Dr.	207	16,800	4,769	7/3/74
1571 Woodbine St.	207	11,407	3,709	5/25/74

Street Address	Land Lot	Sales Price	Assessed Value*	Date of Sale
1265 Boulevard Dr.	208	15,000	7,949	7/19/74
20 Hutchinson St.	208	4,000	3,180	8/16/74
40 Leslie St.	208	18,250	6,359	7/1/74
364 Josephine St.	209	11,500	3,180	6/27/74
367 Moreland Av.	209	12,500	7,420	8/1/74
315 Oakdale Rd.	209	11,200	4,769	6/12/74
361 Arizona Av.	211	14,400	4,345	6/28/74
511 Clifton Rd.	239	28,000	6,359	7/5/74
555 Hardendorf Av.	239	22,000	6,359	8/7/74
512 Harold Av.	239	21,600	7,419	7/10/74
562 Harold Av.	239	24,500	5,564	8/9/74
450 Seminole Av.	15	13,900	6,110	8/27/74
1129 Wade St.	14	4,000	4,470	11/22/74
1048 Austin Av.	15	36,600	5,870	12/31/74
60 Clay St.	206	16,000	4,663	12/16/74
1630 Stanwood Av.	207	16,000	4,662	10/25/74
1357 Fairview Rd.	241	54,200	15,369	12/31/74
1759 Indiana Av.	210	3,900	3,444	2/5/75
1641 Clifton Ter.	239	30,650	5,829	2/6/75
532 Hardendorf Av.	239	25,000	6,359	2/17/75
626 Hardendorf Av.	239	8,500	5,034	8/2/75
22 Clay St.	206	20,000	6,624	2/26/75
1539 Boulevard Dr.	207	14,500	3,974	5/16/75
30 Sanderson St.	208	10,000	4,504	4/29/75
242 Josephine St.	209	5,756	2,649	4/25/75
1490 Iverson St.	210	6,500	4,346	2/28/75
1751 New York Av.	210	18,950	3,604	4/14/75
90 Wesley Av.	210	2,000	1,324	2/12/75
1817 Indiana Av.	211	15,000	3,444	2/27/75
1836 Indiana Av.	211	15,000	3,180	3/27/75
333 Mathews St.	211	21,929	8,452	2/1/75
1786 Marlbrook Dr.	238	27,900	6,094	3/31/75
1794 Marlbrook Dr.	238	37,500	5,936	4/16/75
601 Clifton Rd.	239	43,000	9,010	5/9/75
525 Hardendorf Av.	239	26,500	6,094	4/11/75
1430 North Av.	240	30,900	4,770	5/9/75
1209 Euclid Av.	240	22,500	5,034	3/27/75
1296 North Av.	240	34,000	6,624	4/18/75
474 Whitefoord Av.	240	12,000	**	5/15/75
1415 Boulevard Dr.	208	15,300	4,195	8/21/75
325 Oakdale Rd.	209	18,200	4,954	9/29/75
1793 McLendon Av.	211	31,500	5,564	10/22/75
1806 Marlbrook Dr.	238	13,000	3,074	11/5/75
1758 McLendon Av.	238	31,000	6,094	9/30/75
417 Ridgewood Rd.	238	16,000	2,914	10/23/75
462 Ridgewood Rd.	238	33,000	7,869	11/20/75

Street Address	Land Lot	Sales Price	Assessed Value*	Date of Sale
452 Harold Av.	239	58,650	3,974	8/18/75
525 Page Av.	239	10,000	6,094	8/12/75
519 Candler St.	240	16,000	3,286	9/5/75
1275 Druid Pl.	240	28,800	4,770	10/8/75
1224 McLendon Av.	240	12,975	4,504	4/9/75
30 Sanderson St.	208	14,800	4,504	5/23/75
51 Screven St.	208	10,000	7,154	8/6/75
21 Vinson Dr.	208	16,700	4,663	7/24/75
1501 Iverson St.	210	9,500	4,345	7/1/75
286 Connecticut Av.	211	2,200	4,662	6/2/75
1777 McLendon Av.	211	19,200	5,829	6/13/75
1768 New York Av.	211	2,500	3,613	8/8/75
412 Ridgewood Rd.	238	25,300	6,624	8/6/75
429 Ridgewood Rd.	238	23,500	5,299	7/18/75
545 Clifton Rd.	239	31,500	5,299	7/23/75
572 Clifton Rd.	239	23,500	5,034	8/6/75
566 Hardendorf Av.	239	25,300	6,624	7/1/75
582 Hardendorf Av.	239	24,500	6,094	5/21/75
1671 Muriel Av.	239	30,400	5,829	6/20/75
551 Page Av.	239	26,900	5,830	7/18/75
628 Page Av.	239	31,500	6,360	6/9/75
537 Candler St.	240	32,000	5,299	7/31/75
1336 Fairview Rd.	241	85,000	16,694	5/23/75
1131 Austin Av.	14	49,000	9,250	4/10/75
928 Austin Av.	14	16,500	3,290	3/14/75
1029 Austin Av.	14	26,900	**	6/30/75
930 Austin Av.	14	11,600	3,850	7/3/75
470 Seminole Av.	15	16,800	7,080	8/15/75
455 Sinclair Av.	15	8,000	4,780	8/11/75
470 Sinclair Av.	15	15,025	6,030	7/23/75
1104 Alta Av.	14	15,700	5,240	7/9/75
1112 Austin Av.	14	25,000	6,380	10/3/75
915 Austin Av.	14	9,100	3,360	5/31/75
915 Austin Av.	14	17,000	3,360	9/10/75
203 Degress Av.	14	15,000	5,350	10/24/75
1053 Euclid Av.	15	18,370	**	10/14/75
1030 Austin Av.	14	8,500	5,610	12/2/75
459 Sinclair Av.	15	37,500	4,370	12/29/75
98 Rogers St.	206	100	5,300	12/29/75
1319 Hardee St.	208	15,400	4,239	12/31/75
1679 McLendon Av.	210	7,700	5,829	12/2/75
521 Terrace Av.	239	26,500	5,034	11/26/75
1409 Fairview Rd.	241	69,500	9,504	12/9/75
353 Oakdale Rd.	209	15,500	4,504	1/14/76
295 Arizona Av.	210	15,000	4,770	1/19/76
1768 McLendon Av.	238	31,600	4,829	2/5/76
321 Candler Rd.	209	10,000	**	2/25/76

Street Address	Land Lot	Sales Price	Assessed Value*	Date of Sale
1334 LaFrance St.	209	15,000	**	3/15/76
342 Mathews Av.	211	14,500	8,452	2/27/76
442 Harold Av.	239	12,100	4,133	2/27/76
578 Page Av.	239	33,500	6,465	3/30/76
1200 Mansfield Av.	240	19,750	6,094	3/29/76
492 Clifton Rd.	239	24,000	7,154	5/10/76
482 Harold Av.	239	24,965	7,684	5/3/76
266 Josephine St.	209	18,000	3,604	8/6/76
326 Mathews Av.	211	19,800	8,452	8/18/76
612 Clifton Rd.	239	51,500	9,010	8/20/76
578 Hardendorf Av.	239	37,575	6,889	8/20/76
482 Harold Av.	239	30,060	7,684	8/9/76
1250 Euclid Av.	240	48,000	6,624	8/10/76
1357 Fairview Rd.	241	91,000	15,369	8/16/76
34 Sanderson St.	208	9,580	4,239	3/24/76
292 Josephine St.	209	85,000	3,180	6/15/76
375 Arizona Av.	211	22,500	5,829	7/2/76
322 Connecticut Av.	211	14,800	3,974	7/26/76
1783 Delaware Av.	211	12,000	1,324	6/9/76
1812 New York Av.	211	9,500	3,380	5/27/76
1786 Marlbrook Av.	238	32,000	6,094	6/23/76
1814 Marlbrook Av.	238	16,950	3,974	5/13/76
448 Ridgewood Rd.	238	30,000	5,829	5/27/76
465 Ridgewood Rd.	238	32,000	6,359	6/29/76
472 Hardendorf Av.	239	26,000	5,299	6/28/76
495 Hardendorf Av.	239	20,600	5,034	7/23/76
442 Harold Av.	239	14,650	4,133	6/29/76
1199 Euclid Av.	240	24,000	6,624	7/23/76
1215 Mansfield Av.	240	22,500	4,504	6/29/76
1293 Fairview Rd.	241	65,000	15,899	7/29/76
1431 Fairview Rd.	241	8,500	13,249	7/1/76
1431 Fairview Rd.	241	1,000	13,249	7/2/76
64 Clay St.	207	9,700	9,744	10/29/76
25 Moreland Av.	208	26,650	7,154	10/5/76
1759 Indiana Av.	210	18,500	4,239	9/10/76
416 Leonardo Av.	238	15,000	4,875	10/5/76
446 Leonardo Av.	238	33,500	4,034	11/19/76
1806 Marlbrook Av.	238	18,000	3,074	8/27/76
1814 Marlbrook Av.	238	25,000	3,974	8/30/76
1846 McLendon Av.	238	28,500	4,504	10/1/76
411 Ridgewood Rd.	238	21,500	4,504	12/1/76
441 Ridgewood Rd.	238	29,800	5,564	11/24/76
566 Hardendorf Av.	239	35,800	6,624	10/11/76
633 Hardendorf Av.	239	27,000	**	9/30/76
461 Harold Av.	239	34,000	7,419	11/12/76
581 Page Av.	239	34,100	6,094	8/12/76
564 Candler St.	240	21,000	5,564	8/31/76

Street Address	Land Lot	Sales Price	Assessed Value*	Date of Sale
28 Vinson Dr.	208	15,100	4,552	12/3/76
477 Ridgewood Rd.	238	24,000	6,359	12/21/76
1232 Mansfield Av.	240	20,500	3,710	11/19/76
1124 Austin Av.	14	12,500	5,780	2/4/76
1073 Colquitt Av.	15	21,000	5,120	2/13/76
1149 Austin Av.	14	35,000	7,920	4/13/76
909 Austin Av.	14	14,150	3,350	3/2/76
940 Austin Av.	14	28,000	4,010	4/19/76
187 Degress Av.	14	12,000	3,720	3/24/76
1103 Alta Av.	14	17,600	11,570	6/1/76
458 Seminole Av.	15	34,000	6,730	8/4/76
1094 Alta Av.	14	17,500	5,360	10/7/76
1121 Alta Av.	14	19,000	5,150	8/31/76
1035 Austin Av.	14	22,000	5,000	10/26/76
230 Degress Av.	14	5,000	4,450	11/26/76
1108 Colquitt Av.	15	33,200	4,250	10/22/76
1165 Alta Av.	14	12,000	5,150	12/7/76
1104 Colquitt Av.	15	42,600	5,020	12/17/76
206 Degress Av.	14	14,500	5,190	7/21/76
1063 Alta Av.	14	22,500	4,730	1/12/77
1039 Austin Av.	14	18,000	5,160	2/17/77
206 Degress Av.	14	15,000	5,190	2/1/77
1040 Austin Av.	14	12,600	5,110	2/23/77
206 Degress Av.	14	15,000	5,190	3/11/77
1080 Colquitt Av.	15	26,900	6,-40	2/24/77
1842 Marlbrook Dr.	238	28,000	7,419	1/10/77
445 Harold Av.	239	15,000	4,345	2/20/77
1269 Boulevard Dr.	208	15,900	5,300	3/15/77
306 Oakdale Rd.	209	13,000	4,240	3/17/77
333 Mathews Av.	211	19,500	8,452	3/7/77
1768 New York Av.	211	8,200	3,613	2/8/77
1768 New York Av.	211	8,200	3,613	2/8/77
521 Hardendorf Av.	239	28,650	6,359	3/22/77
582 Hardendorf Av.	239	35,000	6,094	3/21/77
571 Harold Av.	239	20,000	6,624	3/29/77
410 Leonardo Av.	238	30,000	5,246	4/7/77
556 Oakdale Rd.	240	17,500	5,723	4/15/77
567 Oakdale Rd.	240	12,000	3,180	4/21/77

* Not Adjusted
** Not Available

APPENDIX A-3

SPECIFIC PROPERTY SALES

Area I

Address	Date	Price	Increase
A. 1377 McLendon Ave.	1972	9,000	
	1977	24,000	166 %
B. 1599 McLendon Ave.	1972	16,000	
	1975	28,000	75
C. 348 Mell Ave.	1972	8,000	
	1975	20,000	160
D. 328 Candler Pk. Dr.	1973	13,500	
	1973	21,500	59
E. 376 Candler Pk. Dr.	1973	15,000	
	1974	15,500	
	1974	18,600	24
F. 1447 Iverson St.	1974	4,500	
	1976	17,600	291
G. 1507 McLendon Ave.	1974	9,300	
	1975	11,000	18
H. 299 Ferguson St.	1974	17,000	
	1976	20,500	21
I. 372 Candler Pk. Dr.	1974	13,000	
	1976	29,500	127
J. 375 Candler Pk. Dr.	1974	14,550	
	1976	19,200	32

Area II

A. 1703 McLendon Ave.	1972	14,500	
	1975	14,500	.7

Address	Date	Price	Increase
B. 312 Clifton Rd.	1972	13,000	
	1975	13,950	7 %
C. 430 Sterling St.	1972	10,000	
	1975	22,500	125
D. 471 Page Ave.	1972	20,000	
	1973	22,330	
	1976	27,415	37
E. 526 Candler Pk. Dr.	1972	23,500	
	1974	31,069	
	1976	35,000	49
F. 423 Callan Cir.	1973	19,500	
	1977	38,600	98
G. 1287 McLendon Ave.	1973	17,900	
	1976	19,500	9
H. 534 Candler Pk. Dr.	1973	19,000	
	1976	32,000	68
I. 1255 McLendon Ave.	1973	14,800	
	1976	15,700	6
J. 1725 McLendon Ave.	1973	14,950	
	1976	23,500	60
K. 417 Clifton Rd.	1973	16,800	
	1977	21,896	30
L. 411 Hardendorf Ave.	1973	18,000	
	1975	29,000	61
M. 440 Candler St.	1973	8,980	
	1974	14,500	
	1974	15,643	74
N. 1245 McLendon Ave.	1974	12,000	
	1976	21,000	75
O. 1279 McLendon Ave.	1974	15,000	
	1975	20,000	33
P. 336 Sterling St.	1974	12,200	
	1974	14,935	22

Address	Date	Price	Increase
Q. 340 Brooks Ave.	1974	5,200	
	1976	12,500	140 %
R. 443 Euclid Ter.	1974	12,500	
	1976	20,200	62
S. 339 Candler St.	1975	12,500	
	1975	18,500	48
T. 324 Candler St.	1975	13,000	
	1976	15,994	23
U. 455 Candler St.	1976	12,500	
	1976	27,000	116
V. 1270 McLendon Ave.	1976	13,800	
	1976	24,000	74
W. 469 Sterling St.	1976	14,600	
	1977	22,700	55
X. 1273 McLendon Ave.	1976	14,500	
	1977	21,200	46

APPENDIX A-4

INCENTIVE ZONING IN SAN FRANCISCO

(1) Rapid Transit Access. The access shall be to a city or regional rapid transit system, leading directly to a station mezzanine of such system and conforming to the standards of the transit system, the Building Code and other applicable codes. The access shall be entered from a location within the lot lines of the subject lot, either within or outside a building, and shall be open during all business hours common in the area for use by the general public, marked for their use, and easily reached from a street or alley with a minimum sidewalk width of seven feet.

Bonus: Twenty percent (20%) increase in allowable gross floor area.

(2) Rapid Transit Proximity. The bonus shall be available for any lot within 750 feet walking distance from a designated station mezzanine of a city or regional rapid transit system, and shall increase in proportion to the closeness of the lot to such mezzanine. The walking distance shall be measured along streets and alleys with a minimum sidewalk width of five feet, or along passageways conforming to the standards of features 1 above or 6 below. For this

purpose, walking distance shall be taken as the shortest distance from any point along a lot line of the subject property from which there is general access to the subject building.

Bonus: Ten percent (10%) increase in allowable gross floor area.

Note: Larger of above two bonuses apply.

(3) Parking Access. The access shall be from the subject building directly to an automobile parking structure located elsewhere than in the areas of concentrated development. Such parking structure may be either part of or separate from the subject building, but if the parking structure is separate it shall be either in the same ownership as the subject building or part of a Planned Unit Development to include both the parking structure and the subject building. The access shall be open during all business hours for use by occupants of or visitors to the subject building and marked for their use, and shall provide a passageway with a minimum width of five feet, separated from streets and alleys.

Bonus: Five percent (5%) increase in allowable gross floor area.

(4) Multiple Building Entrances. This bonus shall be available where there is more than one major entrance to the subject building, open generally to occupants of the

building for both entrance and exit and readily identifiable to them. All such major entrances shall be accessible from streets or alleys with a minimum sidewalk width of five feet, and shall be located at least 50 feet apart along such streets or alleys. Where a building face at ground level is located more than 20 feet inside the lot line along such a street or alley and contains at least one major doorway, each point at 50-foot intervals along such lot line shall be considered a separate major entrance to the building.

Bonus: Five percent (5%) increase in allowable gross floor area.

(5) Sidewalk Widening. The sidewalk widening shall be along a through street or through alley, shall consist of an arcade, cantilever, building setback or plaza, open at all times to the general public, and shall run the full length of the lot along such street or alley except for necessary interruptions by features required for safety by other provisions of law, ordinance or the Municipal Code. The widened area shall be directly accessible from the public sidewalk at both ends and along at least two-thirds of its length, and if not fully open to such sidewalk shall have a minimum clear width of seven feet. The widened area shall have a minimum height of 10 feet, and although it may be occupied in part by columns, building

services, landscaping and other features, only areas capable of being walked upon shall be credited in computation of the bonus.

Bonus: Fifteen percent (15) increase in allowable gross floor area.

(6) Shortening Walking Distance. The shortening of walking distance shall be computed by comparing walking distances along streets and alleys having a minimum widewalk width of five feet, with distances along walkways through the subject lot that are open during all business hours common in the area for use by the general public. Such a walkway may be either within or outside a building, shall be readily identifiable from the public sidewalk, and shall have a minimum width of 10 feet plus two feet for each wide which has shops, lobbies, elevator entrances or similar features along it. Where a walkway passes through two or more lots, the bonus shall be prorated in proportion to the length of walkway on each lot.

Bonus: Ten percent (10%) increase in allowable gross floor area.

(7) Plaza. The plaza shall be directly and conveniently accessible to the general public during all business hours common in the area, from either a street or alley with a minimum widewalk width of five feet, a feature conforming to the standards of 5 or 6 above, or a permanent public

open space. The creditable plaza area shall be located at least 20 feet inside the lot lines separating the lot from streets and alleys, shall have a minimum entrance width of 10 feet, and shall be at least 30 feet in its horizontal dimensions. For the purpose of measuring such minimum horizontal dimensions, space occupied by a feature conforming to the standards of 5 above may be counted for up to one-third of any dimension; however, no area credited under 5 above shall also be credited as plaza area. Up to two-thirds of the surface of the creditable plaza area may be occupied by planting, sculpture, pools and similar features, and the balance shall be suitable for walking, sitting and similar pursuits.

Bonus: Fifteen percent (15%) increase in allowable gross floor area.

(8) Side Setback. The wide building setback shall extend upward from a height of not more than 40 feet measured at the front of the setback, and shall also extend for the entire depth of the lot. The side setback shall be located either along a lot line which intersects a street or alley and does not itself separate the lot from a street or alley, or in an equivalent position between two buildings or building portions on the same lot exceeding 40 feet in height. The setback area shall be unobstructed to the sky and shall have a minimum width of 20 feet. Setback areas

of irregular width may be credited, provided the minimum width of 20 feet is maintained and no part of the setback area to be credited is separated by a building from the street or alley which the setback intersects. The maximum creditable width of the setback area shall be 50 feet.

Bonus: Fifteen percent (15%) increase in allowable gross floor area.

(9) Low Coverage at Upper Floors. Each open area credited under this bonus shall extend upward unobstructed from a height of not more than 80 feet measured at the front of such open space, and shall also extend for the entire width or depth of the lot. The bonus shall be based upon reduction of both the overall width and the overall depth of the building by a minimum of 20 percent of the respective lot dimensions, with additional bonus awarded as both such dimensions of the build are further reduced. Where the building is not located parallel to any of the lot lines, the overall dimensions of the building shall be measured as appropriate to the specific siting of the building in relation to the lot and to the streets and alleys.

Bonus: Fifteen percent (15%) increase in allowable gross floor area.

Note: Larger of above two bonuses apply.

APPENDIX A-5

TORONTO TRANSIT SYSTEM LEASE AGREEMENT

(1) An annual rental be shown with the developer being responsible for payment of all taxes that may be levied on the lands and the proposed development;

(2) three years advance rent be paid, the second and third year's advances to bear interest at the interest rate applicable at the appropriate time;

(3) the proposed development be shown on a sketch, photograph or plans annexed to the lease;

(4) the time of commencement and of completion of the proposed development be shown;

(5) before commencing construction plans will be submitted for approval by the Commissioner of Property of the Municipality of metropolitan Toronto and by the General Manager of Operations for the Toronto Transit Commission;

(6) before commencing construction the performance bond will be provided;

(7) the proposed development will comply with the zoning by-laws of the local municipality and if the developer is unable to obtain any necessary zoning amendments he may terminate the lease at the end of the first eighteen months of the original term on six months' notice in writing to the Municipality of

Metropolitan Toronto and thereupon the balance of the proposed rent shall be refunded less interest paid by the Municipality thereon;

(8) on termination of the lease the buildings and structures erected on the lands become the property of the Municipality of Metropolitan Toronto.

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